Rural Nebraska Healthcare Network
231 South Chestnut
Kimball NE 69145

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: WC Docket No. 02-60 (Rural Health Care Pilot Program)

Dear Ms. Dortch:

The Rural Nebraska Healthcare Network ("RNHN") hereby submits its Application for funding under the Rural Health Care Pilot Program in the above referenced docket.

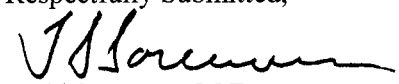
The Rural Nebraska Healthcare Network is a consortium of nine rural hospitals and associated clinics in the Nebraska Panhandle. Since 1996, Rural Nebraska Healthcare Network members have collaborated on projects in order to coordinate a unified healthcare response in the face of the geographic isolation of its patients. In the sparsely populated 14,000 square mile area that comprises the Panhandle, medical expertise and resources are quite limited, especially in comparison to urban areas.

For these medical providers, the opportunity to improve patient care through a broadband fiber network is unparalleled. First, a fiber network enables the health providers to expand and improve opportunities for the provision of care through telemedicine. Particularly for these isolated, rural hospitals, telemedicine offers one of the best ways to supplement emergency and specialized care at the first point of contact Next, the network will enable additional opportunities for telehealth applications including staff-training and the exchange of electronic medical records. Finally the proposed broadband network will enable greater communications and exchange between healthcare providers both in Nebraska and in its surrounding states – Colorado, Wyoming and South Dakota. This will not only improve patient care through a coordinated response to patient needs, but will also improve emergency preparedness and yield important data for the Commission as it looks to revise its Rural Healthcare Rules.

Above all, the proposed network promises to directly improve the quality of life for rural Nebraskans by improving their access to quality medical care.

Please feel free to contact me if you desire any further information.

Respectfully Submitted,



Todd Sorensen, M.D.
President, Rural Nebraska Healthcare Network

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of	)	
	)	
Rural Health Care Support Mechanism	)	WC Docket No. 02-60
	)	

Application for Funding of the Rural Nebraska Healthcare Network Under the Rural Health Care Pilot Program

Todd S. Sorensen, MD
President
Rural Nebraska Health Network
231 South Chestnut
Kimball, NE 69145
(308) 630-1723

May 7, 2007

"We had a patient that required an X-ray. The results looked like a transport to the hospital in Rapid City was necessary. We sent the X-ray file through the VPN and the patient left on the 2 hour journey to the Rapid City Hospital. Because the Internet connectivity was not reliable and fast enough the patient beat the X-ray file to the Hospital."

-- Harold Krueger, CEO, Chadron Community Hospital

"When we have 3 televideo conference connections for education going our T1's full -- don't try to send any files or connect anything else because you'll only ruin your day."

-- Jim Parks, IT Specialist, Alliance Hospital

"In total I have documented 11 different outages in 2005 and 5 outages in 2006. A serious example was in October 2005. We had a complete outage of all data and voice communications except for just 1 telephone line. Telephone lines were down for a total of almost 30 hours. The High Plains T1 was down for 46 hours, during which we could not send or receive data from our hospital information system or transmit digital images."

-- Nicole Neilan, Information Systems Director, Kimball Health Services

Summary

The non-profit Rural Nebraska Healthcare Network ("RNHN") hereby submits this Application for funding under the Commission's Rural Healthcare Pilot Program.

The western Nebraska Panhandle is a desolate rural area covering over 14,000 square miles and is inhabited by only 91,000 persons. Living and working in such a rural area is a challenge. Offering consistent, quality healthcare to its residents is a greater challenge. In this part of the country, patients often must drive for hours in order to visit their local hospital for medical treatment. The nine local hospitals in the Panhandle (which comprise the RNHN) do their best to provide quality medical care to their patients, though they are ultimately limited by their resources (*e.g.*, there are usually only 25 beds or less) and geographic isolation. Indeed, for specialized care, many patients must travel significant additional distances for treatment in South Dakota or Colorado.

In the face of these challenges, the RNHN hospitals have worked together since 1996 to provide the best quality care to rural Nebraskans. Recognized nationally for their efforts, the hospitals have begun an ambitious program of electronic medical records sharing, telehealth, and telemedicine. However, despite efforts to provide quality basic and advanced care, RNHN hospitals have been stymied by the inadequate broadband infrastructure that the hospitals use to communicate. Instead of being able to offer advanced video-monitoring and the rapid exchange of x-rays and medical records, the hospitals may not be able to offer these capabilities at all, or at best, must do so in a limited fashion. As a result, patients are exposed to the risk of duplicative treatment, delay, and error as clinicians may not have the necessary patient information at the point of care.

In order to overcome these deficiencies, the RNHN submits this application in order to build-out an advanced fiber broadband network that will significantly improve the quality of medical care in rural Nebraska.

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I. Introduction and Background

This Application is filed by the Rural Nebraska Healthcare Network ("RNHN") pursuant to the Federal Communications Commission's ("Commission") Order creating the Rural Health Care Pilot Program ("Pilot Program").[1] The Commission's Pilot Program is intended to "examine how the universal service rural health care funding mechanism can be used to enhance public and non-profit health care providers' access to advanced telecommunications and information services...."[2]

In particular, the Commission is seeking useful information so that it can more effectively fund broadband connectivity to health care providers and patients in areas of the country most in need.[3] Only then, will the Commission be able to revise or expand the current program for rural health care.[4] On this basis, RNHN submits this Application for funding to construct and operate a dedicated broadband network that will connect health care providers and provide advanced telecommunication and information services, such as telemedicine, for rural health care providers in western Nebraska and adjoining areas. Grant of this Application will allow RNHN to upgrade its current network and thereby improve health care in rural Nebraska. It will also give the Commission the opportunity to work with and evaluate both telehealth and telemedicine utilization by a group of rural healthcare providers that have experience with not simply x-ray

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[1] *Rural Health Care Support Mechanism*, Order, 21 Commission Rcd 11,111 (rel. Sept. 29, 2006) ("*Order*"). *See also Rural Health Care Support Mechanism*, Order on Reconsideration, WC Dkt. No. 02-60, FCC 07-6, (Feb. 6, 2007) ("*Reconsideration Order*").

[2] *Reconsideration Order* at ¶ 2.

[3] *Order* at ¶ 9. *See also Order* at ¶ 4.

[4] *See id*.

and electronic medical record ("EMR") sharing, but also teletrauma[5], tele-training, access service provider based systems, and tele-specialization.

The patchwork of communications lines that the RNHN has used heretofore has proven inadequate to meet the needs of the hospitals and rural inhabitants of western Nebraska. Because these rural Americans are deprived of the kind of medical resources that are commonly available and easily taken for granted by residents of metropolitan areas (*e.g.*, OB/GYN care), they are often forced to travel long distances at significant risk and expense to receive care. For those experiencing medical trauma, the lack of readily available specialized treatment can result in dire and even deadly consequences. Although this application seeks funding to enable a fiber build-out, it is ultimately designed to improve the ease of access and opportunities for medical care for rural Nebraskans.

A. *The Chadron Community Hospital Experience*[6]

On the night of January 29, 2007, the Chadron Community Hospital in Chadron, Nebraska, located in the Nebraska Panhandle and part of the RNHN, was trauma-team activated. Late that night, a patient was brought in requiring immediate attention including imaging studies. These images were taken at 1:05AM in the morning and transferred via a virtual private network ("VPN") tunnel to Rapid City, SD, where the patient was to be transferred via an AirLink helicopter. Before the flight team had arrived, Chadron was notified that the images had not been received by the Rapid City Regional Hospital. As a result, an already thin staff had to

[5] Teletrauma is the simultaneous transmission of video of a trauma patient along with information concerning vital signs to a remote doctor.

[6] Chadron Community Hospital is the 4th largest of the 9 hospitals represented in this application and their experience is typical of the RNHN members. Of the 9 Hospitals comprising the RNHN; 2 are larger than Chadron, 1 is relatively the same size and 5 are smaller.

waste additional precious time to create CDs of the films to be sent with the patient in the air transport.

Although copies of the images on CD did arrive with the patient, the images that had been sent across the VPN did not arrive at Rapid City until approximately 10:00AM – nine hours later. Because the images were not transferred electronically, the Rapid City physicians were (1) not able to assess the patient's condition in advance of the patient's arrival; and (2) were prevented from assessing the patient's progression through a comparative study upon arrival. According to Toni Chancellor, a radiographer at Chadron, delays like the one that occurred on January 29, 2007, happen several times each month.

A member of the RNHN, the Chadron Community Hospital[7] is located in Chadron, a town in northwest Nebraska that is roughly 105 miles from Rapid City, SD; 105 miles from Scottsbluff, NE; and 277 miles from Fort Collins, CO. In many ways, the experiences of the Chadron Community Hospital are typical of the challenges facing the other RNHN health care providers.

In the current network, a VPN tunnel connects the Chadron Community Hospital with the hospital in Rapid City. Although secure, this tunnel has proved unreliable for data transmission because of packet loss and the menace of system outages. Because medical files (*e.g.*, CT-scans, x-rays) cannot be overly compressed due to the necessity for high resolution, transmission can be further complicated by excessive delay. Indeed, all transfers of information through the VPN depend on the prevailing Internet speed which is often slow. As a result of these transmission problems, patients risk the possibility of undergoing costly duplicative procedures (*e.g.*, x-rays)

[7] Chadron Community Hospital also runs two rural health clinics – Legend Buttes Health Services (Crawford, NE) and Hay Springs Medical Clinic (Hay Springs, NE).

at different points of care or else incurring significant delays as doctors wait to receive and analyze their medical records, which can be stale for progressively worsening conditions.

Meanwhile, the Chadron Community Hospital is separately connected via a T1 line to the hospital in Alliance, NE which, itself is connected by a DS3 line to the Regional West Medical Center in Scottsbluff, NE. Because there are no radiologists on staff at Chadron,[8] all examination records must be sent to Scottsbluff for a diagnostic analysis. In other words, though a patient can have x-rays taken at Chadron, a formal review of those x-rays must be done by a radiologist in Scottsbluff. Due to the sheer size of the files in relation to the T1, when Chadron sends ultrasounds, x-rays, CT-scans and MRIs to Scottsbluff, they must be done one-at-a-time.[9] Even without any other competing use of the network, a large CT-scan (*e.g.*, of a stomach) can take up to 30 minutes to transmit. The speed may be even slower if data is concurrently being received by Chadron. To complicate matters, the T1 is also subject to packet loss in which case items must be re-sent, thereby adding more traffic to the overtaxed network. At the same time, there is no redundancy to the network: If the network goes down, physical transport of patient records to Scottsbluff becomes the only option. Unfortunately, even this option is limited, because the electronic management system (PACs) used in Scottsbluff will not recognize CDs that are burned in Chadron.

Finally, Chadron patients may be referred to the bigger out-of-state healthcare centers in Fort Collins and Loveland, CO.[10] Yet, records cannot be sent or received by Chadron to or from these out-of-state facilities. Thus, where a patient receives medical care out-of-state and returns

[8] Chadron has only family practitioners on staff.

[9] On average, a CT study (400 or more images) is 200Mb.

[10] For example, when coronary intervention is required, it cannot be done at Regional West Medical Center.

for follow-up to Chadron, Chadron clinicians are often hampered from providing adequate care because the patient's records are not complete and fully accessible.

For a hospital like Chadron, this Application represents a tremendous and indeed life-saving opportunity to improve patient care. The construction of a fiber network as proposed by this Application would alleviate many of the real-world concerns described above, because it would allow for the transfer of files in seconds or minutes instead of hours, easier access to patient records and information, and the addition of bandwidth necessary to support greater use of telemedicine and telehealth applications.

B. *The Nebraska Panhandle*

The remote 11-county, 14,000 square mile Panhandle region comprises all of western Nebraska is the area proposed to be served by the RNHN.[11] The 90,410 Panhandle residents are especially isolated, inasmuch as, on average, there are only 6.5 people per square mile. None of the counties fall within the Census Bureau's Metropolitan Statistical Area designation.[12] Further, 8 of the 11 counties are considered frontier counties (*i.e.*, those with fewer than 7 persons per square mile).[13] The Panhandle region of Nebraska is bordered by equally isolated areas of Wyoming (west), Colorado (south), and South Dakota (north).

[11] RNHN hospitals are also found in Grant and Perkins counties, similarly rural in character and adjacent to the Panhandle.

[12] Nancy Shank, *Regional Health Records for Frontier Communities*, (2005), at http://ppc.unl.edu/publications/documents/RegHealthRec-FrontierCommunitiesFinalReport.pdf (last visited May 2, 2007).

[13] *See id.*

Seven of the counties are full federally-designated Primary Medical Care Health Professional Shortage Areas, one is a partial area, and one is a special population shortage area.[14] Three counties are entirely federally-designated Medically Underserved Areas, and one is a Medically Underserved Population.[15] In 2005, there were only 1.4 practicing physicians per 1,000 persons in the western Panhandle.[16] All 11 counties are federally-designated Mental Health Professional Shortage Areas, with only three psychiatrists (all practicing in a single county) in the entire area.[17]

Panhandle residents are even poorer than those living in other parts of Nebraska and the United States. Almost fourteen percent (13.6%) of Panhandle residents live below the federally defined poverty level.[18] Moreover, one of the 11 Panhandle counties has one of the nation's ten lowest per capita personal income levels.[19]

The population of the Panhandle includes vulnerable populations who have an increased susceptibility, or higher than the national average risk, for health-related problems. This vulnerability or risk is evidenced in increased comparative morbidity and mortality rates,

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[14] *See* Nebraska Health Information Project 2005 Data Book, 48 available at: http://www.unmc.edu/nebraska/databooks/2005-data%20book/pdf/bk2005ch-2.pdf.

A 'Medical Health Care Shortage Area' is one in which the Secretary for Health and Human Services has determined there is a shortage of health care professionals. *See* 42 C.F.R. 5.1 et seq.

[15] *See* R. Fraser et al. *Health Professional Shortage Areas: Nebraska – 2003*, (2003). A medically underserved population may be a whole county or a group of contiguous counties, a group of county or civil divisions or a group of urban census tracts in which residents have a shortage of personal health services. *See* Health Resources and Services Administration, *Guidelines for Medically Underserved Areas and Population Designation*, at http://bhpr.hrsa.gov/shortage/muaguide.htm.

[16] *See* Nebraska Health Information Project 2005 Data Book, 48 available at: http://www.unmc.edu/nebraska/databooks/2005-data%20book/pdf/bk2005ch-2.pdf

[17] *See* Fraser, *supra* note 15; *See also* 42 C.F.R. Part 5 Appendix.

[18] *See* Shank, *supra* note 12 at 3.

[19] *See id*.

decreased life expectancy, and decreased access to care.[20] The vulnerable populations in the Panhandle include geographically isolated seniors, veterans, the disabled, Hispanics, and Native Americans. Racial and ethnic minorities make up 13.4 % of the Panhandle residents.[21] In Garden County alone, veterans comprise 13.9% of the population and 18.9% of the population is designated disabled.[22] Overall, Hispanic Americans account for 10.8% of the area population.[23]

The Panhandle has an above average population of Native Americans compared to the rest of Nebraska.[24] Indeed, the predominantly Lakota people residing in four Panhandle counties (Box Butte, Dawes, Scotts Bluff, and Sheridan) are not federally recognized within Nebraska and therefore do not have access to many health services and resources without traveling to Pine Ridge Reservation in South Dakota. For residents in Scottsbluff, this means an eight-hour round trip drive. Unfortunately, when surgical and specialty care is needed, the trip is even further – to Rapid City, South Dakota. Additionally, Indian Health Services often does not accept patients during the weekend. All of these access challenges mean that many native population members access care at Panhandle hospitals and their clinics, and yet those clinics, as hopefully demonstrated by this Applications do not have an adequate and stable communications system necessary to reach other facilities. Other important underserved populations include migrant and undocumented workers, employed by the Panhandle's seasonal agricultural industry.

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[20] *See id.*

[21] Nebraska Health and Human Services, Panhandle Public Health Department Summary, at http://www.hhs.state.ne.us/hew/hpe/cvh/docs/panhandle.pdf (last visited May 2, 2007).

[22] *See* U.S. Census. Garden County Community Profile, at http://factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=&_geoContext=&_street=&_county=garden+county&_cityTown=garden+county&_state=04000US31&_zip=&_lang=en&_sse=on&pctxt=fph&pgsl=010&show_2003_tab=&redirect=Y.

[23] Nebraska Health and Human Services, Area Profile – Panhandle, at http://www.hhs.state.ne.us/profiles/panhandle_HD.htm.

[24] *See id.*

About one fifth of Panhandle residents aged 21-64 (21.6%) report having no health care coverage.[25] One in eight adults (12.1%) stated that, at some time in the past year, they needed to see a doctor but could not due to the potential cost of care.[26] Residents who reported a problem (other than cost) in getting medical care cited work, long waits, no insurance, as well as transportation time and distance.[27]

Similar to many other rural areas, the age distribution is also undergoing dramatic reshaping. The rural population in Nebraska is declining, while at the same time, the population of persons 65 years and older in Nebraska is growing at a rate outpacing national trends.[28] Nebraska ranks twelfth nationally in percentage of population over 65; sixth in the over 75 age group; and fourth in the over 85 age group.[29] For 11 of the 12 counties to be served by the proposed network, the median age exceeds the statewide median.[30]

The Panhandle features higher-than-average rates of unintentional injury death (25% higher than the statewide rate), motor vehicle death (48% higher), and suicide (46% higher). Additionally, Panhandle residents are 25% more likely to be hospitalized for digestive diseases, respiratory diseases, injuries due to motor vehicle crashes, and self-inflicted injuries. Finally, it is widely estimated that 5% of the U.S. population experiences Severe and Persistent Mental Illness. This translates to 4,500 persons in the Panhandle. The Panhandle Mental Health Center

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[25] Nebraska Health and Human Services, Panhandle Public Health Department Summary, at http://www.hhs.state.ne.us/hew/hpe/cvh/docs/panhandle.pdf.

[26] *See id.*

[27] *See id.*

[28] *See* SRF Consulting Group, Nebraska Rural Transit Study (Final Report) Prepared for the Nebraska Department of Roads, 4-6 (Dec. 2005).

[29] *See id.*

[30] *See id.* at Figure 2-7. The Panhandle is comprised of the 11 western-most counties, though RNHN hospitals are also found in Perkins County – adjacent to the Panhandle.

serves approximately 550 persons diagnosed with severe and persistent mental illness. For this most needy population, that leaves 3,950 who receive care outside of the specialty mental health setting or receive no care.[31]

The Panhandle comprises approximately 105 miles east to west and 140 miles north to south.[32] Of major concern in such an isolated area is transportation and distance from health services. Twenty minutes is generally considered an optimum drive time; in stark contrast, the travel time for patients seeking specialty care in the Panhandle region typically is between one and three hours. For patients seeking care in an emergency room, the average distance is significantly higher in the Panhandle (10.0 miles) than for the rest of Nebraska. Moreover, the average distance to the ER, where patients prefer to receive care, is nearly twice that far (19.3 miles), and also significantly greater than the state average.[33]

An additional obstacle is a widespread lack of available transportation. Many Panhandle residents may lack ready access to a vehicle and have to rely on rural transit systems to receive medical services. One Nebraska rider survey found that one out of every three rural transit trips is related to receiving medical services.[34] The typical rural transit passenger in Nebraska is an elderly woman (65 and over) with a household income under $20,000.[35] That person is unlikely to be able to drive a car and may have difficulty boarding a bus, assuming, of course, that a bus is available.[36] The Handibus, funded by the State of Nebraska through federal allocations,

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[31] *See* Shank, *supra* note 12 at 3.

[32] Approximate distances does not include Perkins county.

[33] *See* Nebraska Health and Human Services, *supra* note 25.

[34] *See* SRF Consulting Group, *supra* note 28 at 118.

[35] *See id*. at 57.

[36] *See id*. (reporting that 41% of riders express difficulty in boarding a bus.)

provides transportation services throughout Nebraska except for the Panhandle counties of Garden, Banner, and Sioux. The majority of these Handibus services are provided to seniors, and many community members reported that trips on the Handibus are day-long affairs, particularly when several individuals are using the service.[37]

It is no surprise, then, that the Panhandle is a region in need of improved access to locally provided health care, including specialty care. One of the easiest and best ways to accomplish this access is through the region-wide implementation of technological solutions including the use of telehealth and telemedicine programs.

C. *Rural Nebraska Healthcare Network ("RNHN")*

The RNHN is a non-profit consortium of nine non-profit and/or public hospitals and twenty supporting clinics in the Panhandle of Nebraska that have worked together strategically since 1996 to develop sustainable local health and preventative health services.[38] The RNHN consists of the following list of Critical Access Hospitals as well as the Regional West Medical Center:

[37] *See* Scientific Technologies Corporation, Nebraska Panhandle Community Health Profiles, Exhibit G.

[38] The RNHN consists of eight Critical Access Hospitals and one System hospital. A Critical Access Hospital (CAH) is a hospital that is certified to receive cost-based reimbursement from Medicare. The reimbursement that CAHs receive is intended to improve their financial performance and thereby reduce hospital closures. It should be noted that throughout this proposal the RNHN is the name adopted by the consortium of 9 hospitals and does not mean the same thing as the existing T1 Network.

Table 1: The RNHN Consortium of Critical Access Hospitals

Critical Access Hospital (CAH)	Town	CAH Network Hospital
Box Butte General Hospital	Alliance	Regional West Medical Center
Chadron Community Hospital	Chadron	Regional West Medical Center
Garden County Health Services	Oshkosh	Regional West Medical Center
Gordon Memorial Hospital	Gordon	Regional West Medical Center
Kimball Health Services	Kimball	Regional West Medical Center
Memorial Health Center	Sidney	Regional West Medical Center
Morrill County Community Hospital	Bridgeport	Regional West Medical Center
Perkins County Health Services	Grant	Regional West Medical Center

The RNHN enables the participating hospitals to plan and implement improvements to their systems of care, to develop and provide training opportunities, to plan for trauma and emergency preparedness, and to address policy issues impacting health care. The RNHN has been successful in sharing resources and overcoming many of the barriers rural healthcare providers face today. In one of its major initiatives, the RNHN is currently in the planning and implementation phase to create a western Nebraska Health Information Exchange which will enhance patient safety and quality of care through the effective exchange of health records and information among health care providers.

The RNHN has established a Training Academy with the western Nebraska Community College to provide ongoing education efforts for its clinicians and staff. In addition to the specific health information and IT user training courses, the Training Academy is developing and purchasing courses which can be offered through video conferencing and "webinars." These courses, which enhance the health care system and credentials of healthcare employees range from direct skills, such as phlebotomy, to Hospital Incident Command for emergency response. Meanwhile, an ambitious project of health information training has been ongoing since 2004

with more national certifications per capita in western Nebraska than anywhere else in the country.[39]

The participating hospitals of the RNHN provide crucial access to their services through 55 primary care physicians (36 general practice or family practitioners, 11 internal medicine, 3 pediatricians, 5 obstetricians/gynecologists). Three psychiatrists also practice in the region. Additionally, the hospitals provide rural health clinics, which most patients view as direct extensions of the hospitals. Two of these clinics are provider-based, seven are hospital-based, and a federally qualified health clinic primarily serves Scottsbluff County. All of the clinics serve the uninsured, underinsured and the community.

The number of services available at each RNHN facility varies, but as a general matter, access to specialized care is quite limited. (*See* Exhibit H for a listing of the services and facilities available at each hospital) For instance, at Kimball Health Services, a 20-bed hospital 65 miles east of Cheyenne, WY, medical care is available for those seeking emergency treatment, blood bank, immunizations, lab results, radiology, and nutrition. Nevertheless, Kimball clinicians may need to rely on other hospitals in the network (*e.g.*, radiology and other tests that need to be sent to the Poudre Valley Hospital System in Fort Collins, CO). Moreover, Kimball does not have the ability to provide many other services, including prenatal care, cancer treatment, diabetic treatment, intensive care, occupational health, pediatrics, physical therapy,

[39] 67 staff-persons have participated in trainings to become a Certified Professional Health Information Technology or Certified Professional in Electronic Health Records.

and OB/GYN. For this care, Kimball patients must seek treatment elsewhere – with the accompanying commitments of time, money, and effort.[40]

Likewise, Box Butte General Hospital ("BBGH") in Alliance, NE, is the initial point-of-care for many rural Nebraskans seeking medical service. Although BBGH has some limited resources to provide services like OB/GYN, prenatal, radiology, pediatrics and orthopedics, those in need may be referred to Rapid City, Scottsbluff, Fort Collins or Denver to receive high-level or specialized care.

For Box Butte patients, the following scenarios, all of which require significant travel and administrative coordination, are typical. First, if a patient arrives in the ER with fractured hip, x-rays are taken by an x-ray technician at the hospital. The x-ray is then sent electronically to Medical Imaging Associates in Scottsbluff, Nebraska. The x-ray is read by a radiologist and a result may take up to 2 hours. The radiologist then communicates the results verbally to the patient's provider. If the fracture is severe enough to require surgery, the patient must be transferred to Scottsbluff via ambulance 60 miles away. In this case, the patient is stabilized and the local ambulance service is contacted for a transfer. Usually the local ambulance service will transfer the patient, but occasionally another ambulance service may need to be contacted to make the transfer. After surgery, the patient can be transferred back to BBGH.

Another patient may complain of chest pain. Lab tests and an EKG will be ordered. If the tests come back positive for a heart attack, the patient will be transferred to either Rapid City or Fort Collins. Rapid City is approximately 155 miles one way from BBGH and Fort Collins is

[40] Most Kimball patients are referred to Scottsbluff for such items as occupational health, orthopedics, prenatal care, cancer treatment and OB/GYN. Kimball patients may be referred out of the Panhandle entirely for cardiac, surgical services, or specialty care (burns, pediatric, ICU).

approximately 205 miles. Typically, an air ambulance service is contacted to transport the patient, but if he is unable to fly, a ground ambulance crew will be contacted for the transfer. The patient is stabilized and then transferred to a higher level of care. Usually, the patient will be referred back to BBGH for cardiac rehabilitation. The patient can usually see a cardiologist at BBGH, but occasionally may have to travel for follow-up care.

Finally, a patient may see his local primary care provider for a questionable mole on his body. Typically, the patient is referred to a dermatologist either in Rapid City (approximately 155 miles one way) or Cheyenne, WY (approximately 160 miles one way). The patient must travel to see the dermatologist for the initial visit and may be required to make several follow-up visits if the mole is determined to be cancerous.

Due to the limitations at BBGH, which is similar to the other rural hospitals comprising the RNHN, the utility and need for the RNHN's proposal becomes all the more apparent.

The RNHN prides itself on its proven track record as a recipient of project funding and as a leader in implementing rural health telemedicine. In 2005, the RNHN was awarded Outstanding Organization of the Year by the National Rural Health Association. The RNHN was the recipient of Agency for Healthcare Research and Quality Planning and Implementation grant, which has laid the foundation for the western Nebraska Health Information Exchange.[41]

Notwithstanding its history of success, the RNHN recognizes the challenges it faces, particularly as its current technological needs and capacity struggle to satisfy patient demands. Telehealth has been and continues to be implemented by the RNHN out of necessity. Rural health providers do not have access to the resources available in urban hospitals and telehealth is

[41] The Agency for Healthcare Research and Quality is an agency of the Department of Health and Human Services.

one resource that allows providers to make up for this resource gap. However, for the rural providers in the RNHN, the ability to exploit telehealth and telemedicine technology is severely limited by the constraints of the current network. Because the broadband capacity provided by RNHN's network of T1 lines is presently inadequate and because the information and experience provided by an upgrade of that network will prove extremely useful for the formulation of permanent Commission rules and programs for access to advanced health care services, RNHN believes that it is an ideal candidate for the Commission's Rural Health Care Pilot Program.

D. *The Need for a Fiber Network*

The need for a consortium of hospitals, such as the RNHN, in the Panhandle of Nebraska can be readily seen when considering the distances required to travel to the member hospitals as shown on the following map:

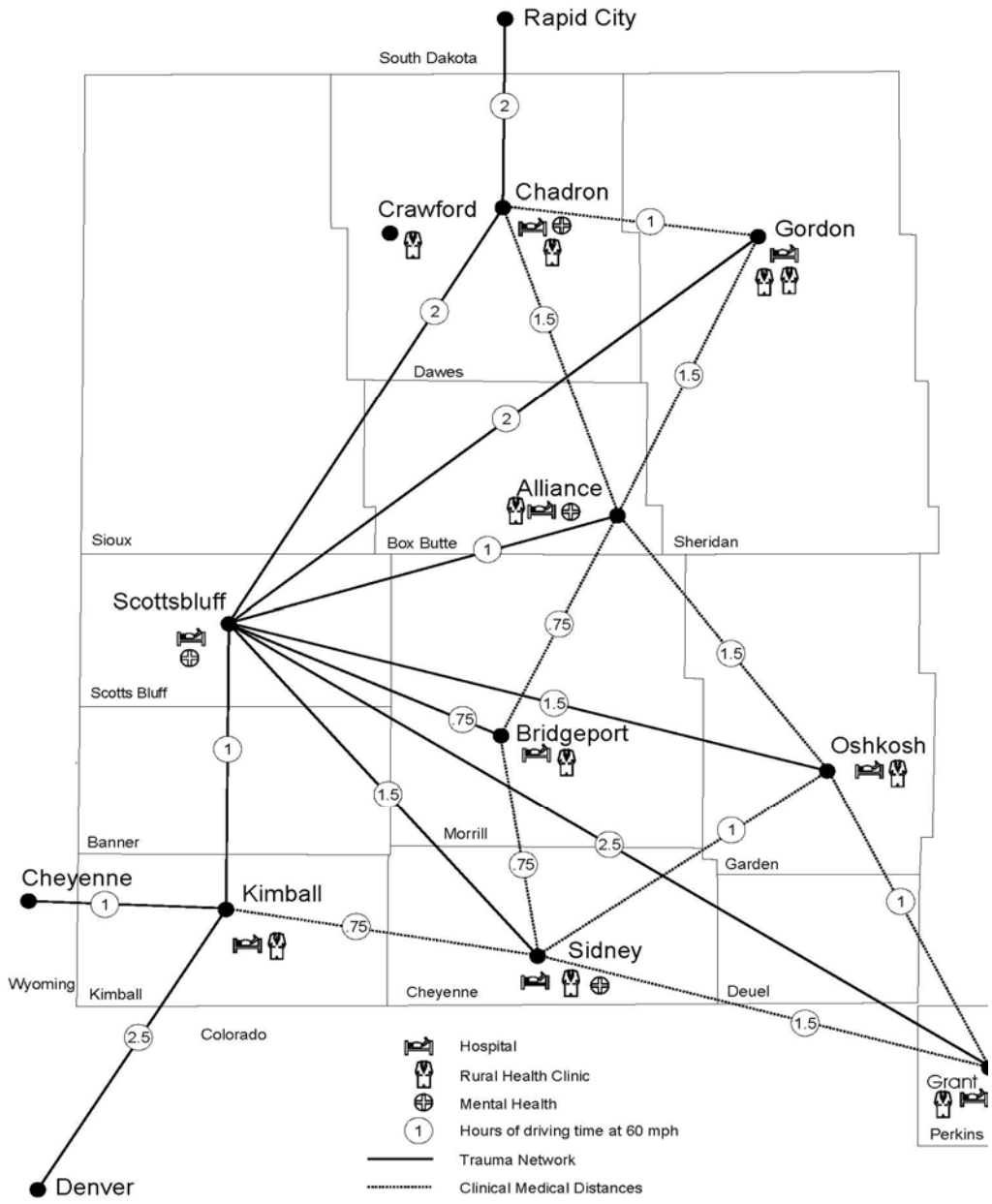

Figure 1: Map of the RNHN

The shortest driving distance between any two hospitals is 45 minutes and the longest is four hours. Several of the smaller, more distant hospitals (Oshkosh, Gordon, Sidney and Grant) are dependent on the larger hospital (Regional West Medical Center) for critical emergency care. These distances are reduced through the joint use of a medical helicopter; however, the distances

can be shortened and critical emergency care improved even further through the implementation of telemedicine to diagnose, consult and treat patients remotely.

Table 2: County Population and Square Mileage

County	Population	Area (Square Miles)
Banner	819	746
Box Butte	12,158	1,078
Cheyenne	9,830	1,197
Dawes	9,060	1,401
Deuel	2,098	441
Garden	2,292	1,731
Kimball	4,089	952
Morrill	5,440	1,430
Perkins	3,200	884
Scottsbluff	36,951	746
Sheridan	6,198	2,470
Sioux	1,475	2,067
Total	93,610	15,143[42]

The area served by the RNHN is a large part of the need for connectivity. The nine hospitals serve 12 counties in Nebraska. These counties are sparsely populated and cover a large area as shown in the table above:. The county populations that are served by the 9 hospitals range from 819 to 36,951 people. The sparse population density of these areas adds yet another dimension that the hospitals must overcome. It is no surprise that full health care service is difficult to provide in rural areas. Doctors may be reluctant to relocate to these areas and specialists will not have the volume to support a practice.

[42] *See* U.S. Census, Population Data 2000. Perkins County is served by the RNHN though traditionally it is not considered a part of the Nebraska Panhandle.

Table 3: RNHN/State Square Mileage Comparison

STATE	SQUARE MILES
RNHN	15,143
Maryland	12,407
Hawaii	10,931
Massachusetts	10,555
Vermont	9,614
New Hampshire	9,350
New Jersey	8,721
Connecticut	5,543
Delaware	2,489
Rhode Island	1,545
District of Columbia	68

The combined area covered by the RNHN is larger than nine states. Considered differently, the RNHN covers an area that is roughly 225 times larger than Washington D.C.

The challenges facing health care providers are not simply ones of geography and population density, but also securing reliable broadband connectivity. Unfortunately, the broadband network facilities in this part of Nebraska are limited, expensive (especially for the limited budgets of the RNHN members), and cannot deliver the necessary bandwidth to meet the telehealth and telemedicine needs of the Panhandle.[43]

[43] Nicole Neilan, Information Systems Director at Kimball Health Services, states that, "as radiology data traffic and videoconferencing traffic increases Panhandle-wide, we are reaching capacity on these private data T1 lines. The sending of a series of MRI and CAT scan images depend not only on the capacity of the point-to-point T1 between Kimball and Scottsbluff, but also on available bandwidth beyond, such as between Scottsbluff and Ft. Collins or Alliance and Scottsbluff. These circuits are shared by multiple facilities with multiple simultaneous data streams and the traffic will only continue to increase." Additionally, the current patchwork is connected and relies in part on the Nebraska Telehealth Network, a separate network that uses T1 connections throughout Nebraska. However, the Nebraska Telehealth Network cannot substitute or meet the needs of the RNHN, inasmuch as (1) it relies on the same speed connections that have failed to work for the RNHN hospitals, and (2) the Nebraska Telehealth Network lines follow an East/West configuration (not the North-South configuration of RNHN). Moreover, the Nebraska Telehealth Network does not support VoIP technology due to restrictions requested by the underlying carrier.

As Figure 2 demonstrates, the hospitals of the RNHN have worked to patch together facilities that reduce costs and improve connectivity. This patchwork of T1s interconnects the hospitals to the Regional West Medical Center in Scottsbluff, which also serves as a hub for data traffic to out-of-state locations. This quasi-network runs on T1's leased from incumbent utility companies (red lines). These T1's are typically run within an Incumbent Local Exchange Carrier's ("ILEC") exchange boundaries to reduce costs. Where connectivity is needed that crosses the ILEC exchange boundaries, the hospitals lease a DS3 of capacity on an Internet Service Provider/Competitive Local Exchange Carrier (ISP/CLEC) microwave radio system (green line between Alliance and Scottsbluff). Two hospitals have also used VPNs on the public Internet (purple) to directly connect to hospitals to which they frequently refer patients.

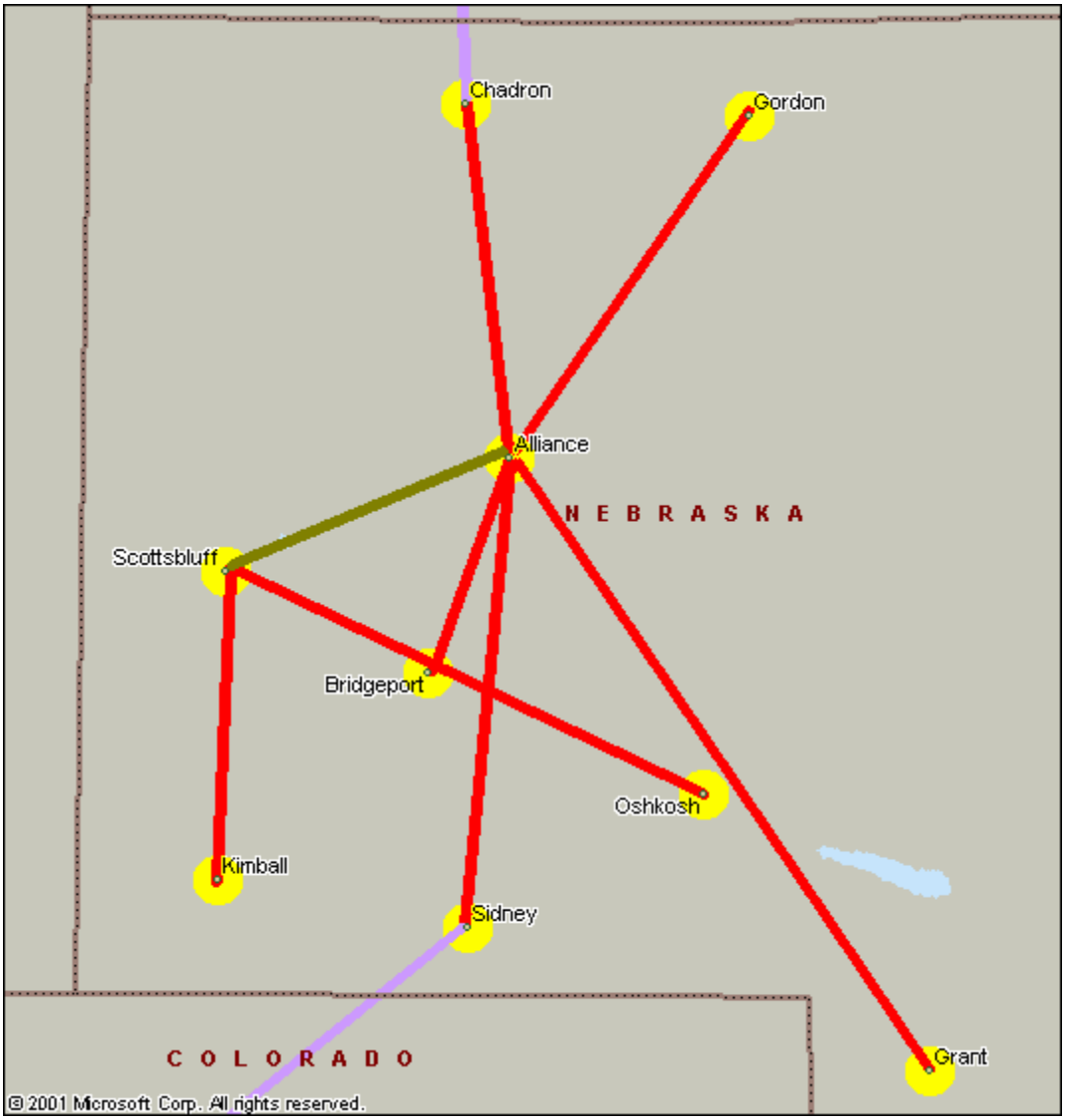

Figure 2: Current Network Facilities

This entire patchwork is only made possible because of federal telemedicine funding under current programs; in particular, current rural health care funding by USAC. Additional capacity between hospitals is needed, yet unfortunately, even with USAC support, the additional costs of that connectivity are prohibitive, especially for the smallest hospitals.

The T1 network technology used by the patchwork is outdated and inadequate. A T1 connection can only handle up to 1.544 Mbs of data. The trauma care units of the hospitals that

allow a specialist in Scottsbluff to view a trauma victim at another hospital requires over 360K of capacity. Couple that usage with other trauma patients, conference calling for consultations, distance-learning, and the transmission of x-rays, it can easily be seen how the network capacity is quickly overwhelmed. In fact, when a trauma patient enters the emergency room of a hospital with teletrauma capabilities, all other communications must cease until the patient is in a stable condition. Thus, it may be impossible to transmit the x-rays of a trauma patient while the patient is being monitored via video conference. In another instance at Chadron, a patient received x-rays at Chadron and was referred to Rapid City (located two hours away) for care. Although the patient's x-ray was sent ahead of the patient, the patient arrived at Rapid City in advance of the x-ray because of the capacity constraints of the network.

Moreover, the current patchwork is not reliable. There is no backup connectivity, and the critical path connections have been designed using a technology that is less reliable than fiber connectivity. Currently, the microwave connection between Alliance and Scottsbluff is the critical path and yet it is also the most failure-prone part of the system. In the event of a failure the hospitals lose service and access to specialists and general services. The following examples illustrate how outages have affected hospital operations:

- Admissions in Chadron are processed using Regional West Medical Center as an Applications Service Provider ("ASP").[44] When the connectivity has been lost in Chadron, it has resulted in significant administrative chaos and delay.

- Bridgeport uses Regional West Medical Center as an ASP for its payroll. However, when the connection was lost on payday, a Bridgeport employee had to drive to Regional West Medical Center (45 minutes each way) to pick up the paper checks and deliver them to its employees.

[44] An ASP is an organization that hosts software applications on its own servers within its own facilities. Others use the application and access it over the Internet or via a private line connection. The theory underlying the ASP is that through its use, small hospitals like Chadron can save thousands of dollars in administrative costs, assuming that connectivity is adequate and reliable.

• As a cost savings measure, additional RNHN providers are interested in ASP opportunities but have been prevented from pursuing them because they must have reliable connectivity before they depend on ASPs for operational support. The reliability of the current T1 patchwork is not adequate to facilitate such endeavors.

• Billing and insurance claims are processed on the Internet or through the Intra-network. When the connectivity has gone down, the hospitals have been prevented from processing claims.

• Often, training sessions have been scheduled for employees, but because the T1 network could not handle the capacity needed to reliably broadcast the video, the employees have gone without. Nevertheless, the hospitals must still try to use tele-training to keep their staff working and reduce costs. (It should be noted that keeping staff close to home is critical because the hospitals do not have enough employees to back everyone up. When an employee is gone, the hospital may be left without service options because no one else may be able to perform the work.)

• Although not a part of the T1 network, the hospitals and the whole Panhandle of Nebraska have experienced a complete outage of long distance service when a farmer cut the fiber near Grand Island (roughly 250 miles from Scottsbluff). In this part of Nebraska, there is no redundant connection to the outside world. In other words, once the line went down, service was lost for everyone.

Unfortunately, at present, the ability of the RNHN to provide telehealth services is directly and severely constrained by network connectivity and capacity (or more properly, lack thereof). For instance, teletrauma is utilized today by three of the hospitals (Alliance, Chadron and Sidney) in cooperation with Regional West Medical Center; however, as described above, the capacity of the current connectivity is not adequate to maintain ongoing daily operations and provide emergency service with the teletrauma rooms. Additional teletrauma will be utilized by additional hospitals when connectivity becomes more reliable and can handle higher volumes.

Finally, in looking toward the future, the RNHN recognizes that the current, limited system of support through the existing federal support program will not work in the coming years given the exponential growth in bandwidth demands. Indeed, Regional West Medical Center is currently investing in a 64 slice computed tomography ("CT") scanner. One file from this machine will be 19 Gigabytes. The current T1s, operating at a maximum speed of

1.544Mbs, will simply not support utilization or file sharing of this machine with other providers.

E. *Challenges Facing Rural Providers, Telehealth and Telemedicine*

Clinicians need to be able to access comprehensive information about patients to make decisions and execute timely orders. Information is needed at the point of care and at the time of care. When clinicians do not have information about conditions, previous test results, medication, and allergy lists, precious time may be lost in locating and obtaining releases between providers, and transporting or otherwise communicating information. As a result, there may be medication errors, repeated tests, protracted diagnoses, and longer than optimal recovery periods. Additionally, tests, orders, results, and specialists' information may never be communicated back to the local doctor or hospital. Meanwhile, rural physicians provide care under alarming pressures to serve significantly more patients with less access to technological and collegial support.

Not surprisingly, in rural areas, efficiency at all levels of the organization is necessary to survive. Instead of dedicating all of their time to patients and treatment decisions, physicians are faced with juggling and requesting records from multiple, distant providers. Moreover, rural staff spends precious time capturing, storing and retrieving information that has already been captured by others. The costs of transferring records (*e.g.*, staff costs, copying, long distance, and in some cases, postage) can be significant.

From the patient perspective, it is vital to have health care that is both geographically and financially accessible. In rural regions like western Nebraska, patients must be able to rely on networks of viable critical access hospitals that provide the only care for hundreds of miles. The

creation of the critical access hospital designation has created regional systems of primary, secondary, and tertiary care that promote the local health service as the medical home and key point of contact. However, the hospitals are thinly-funded and patient volumes make profitability difficult.[45] Further, the critical access hospital network concept breaks down when clinicians do not have information about patients as they move back and forth between providers. When care is duplicative, delayed, or inappropriate, patients end up paying more, in direct charges, as well as time off of work, and other indirect costs.

To alleviate these challenges, health information technology can maximize the productive and efficient use of resources. In short, telehealth and telemedicine applications offer the promise of increasing efficiency to overcome these challenges and maximize patient quality of care.

Stated differently, health information technology helps providers share information and reduce costs, thus making health care more affordable to patients. One study, for instance, found that information sharing, including linking to outpatient and post-acute care during discharge planning, reduced re-hospitalizations by 50%.[46] For rural patients, then, information sharing can result in care that is more financially accessible and of better clinical quality.[47]

Advanced telemedicine offers additional opportunities to improve healthcare access to the remote communities in the Panhandle. Telemedicine is the delivery of medical care and

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[45] J. Stensland & M. Milet, *Variance in the profitability of small-town rural hospitals*, Walsh Center for Rural Health Analysis (2002).

[46] M. Thompson, *Five Giant Leaps Toward Integrating Health Care Delivery and Ways to Drive Organizations to Le*ap or Get Out of the Way, 23(3) Journal of Ambulatory Care Management 1 (2000).

[47] Electronic health records, for example, create efficiencies that enable greater time for patient care. *See* Healthcare Information and Management Systems Society (n.d.). *EHR and the Return on Investment*, at http://www.himss.org/content/files/EHR-ROI.pdf (last visited May 2, 2007).

services from a distance. This can include both remote diagnostics and remote patient consultations.[48] In its *Order*, the Commission has recognized the importance of these applications to allow "patients to access critically needed medical specialists in a variety of practices, including cardiology, pediatrics, and radiology without leaving their homes or their communities."[49] As the Commission has further recognized, telehealth can enable a single medical professional to administer services to a number of patients over a wide area, resulting in shorter hospital stays and reducing the need for additional clinical treatment.[50]

One driver of the proliferation of telemedicine has been the need to improve access to care for patients who are geographically restricted.[51] For patients who already need to travel great distances to their local hospital, additional trips for specialty care become all the more burdensome. This is particularly true where, as in the Panhandle, arranging for transportation is an issue. Thus, the need to provide telemedicine is magnified.[52]

Visits to hospitals and distant healthcare facilities can often be time-consuming and costly for both patients and providers. In some cases, they can be more effectively made without an in-person visit. This can save the patient the cost of travel, time off work, arranging for day

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[48] Meanwhile, telehealth is a term that connotes the support of healthcare through telecommunications. *See Order*, at n.2.

[49] *See Order* at ¶ 5.

[50] *See id.*

[51] *See* First Consulting Group, *Telemedicine in the Ambulatory Setting: Trends, Opportunities and Challenges*, White Paper (2007) (identifying the three major drivers of the adoption of telemedicine as (1) the need to manage patients with chronic diseases efficiently; (2) the need to improve access to care and increase efficiency; and (3) the value of empowering patients.)

[52] The benefits of telemedicine services have been documented in rural Arkansas, where results suggest that without telemedicine, 94% of patients would travel greater than 70 miles for medical care; 84% would miss at least one day of work; and 74% would spend $75-$150 in additional family expenses. With telemedicine, 92% of patients saved $32 or more in fuel costs; 84% saved $100 or more in wages; and 74% saved $75-$150 in family expenses. *See* A.B. Bynum, *The Impact of Telemedicine on Patients' Costs Savings*, 9(4) Telemed J. E. Health 361-7 (Winter 2003).

care, and making necessary arrangements to travel long-distances (*e.g.*, arranging for a nurse to accompany the patient or ensuring that an oxygen tank or ventilator has been secured). Those patients must travel to receive medical care may be forced do so with increased risk because travel to the healthcare facility will be through remote, unpopulated areas without ubiquitous cell phone coverage. For residents of the Panhandle, these concerns are directly implicated where they cannot receive all of their patient-care needs at one facility.

Today, the technologies to provide remote consultations are available to the RNHN. Consultations can now be accomplished by Internet-based video-conferencing. During such conferences, a nurse attending the patient can transmit detailed measurement information to the remotely-located doctor. Alternatively, technologies like digital stethoscopes now allow a remote doctor to hear amplified audio of a patient's heartbeat and breathing patterns. This information can even be stored and examined at a later date and used for reference in case management. Teletrauma has already been deployed in several RNHN hospitals.[53]

Teletrauma adds a virtual link from rural hospital emergency rooms to physicians at the Regional West Medical Center. For example, suppose a patient involved in a car accident is brought by local ambulance to the nearest hospital emergency room in Alliance, NE. The Alliance clinician will contact the Regional West emergency department and request a teletrauma consultation. Using a highly sensitive video camera and microphone, along with monitors at both locations, physicians at both ends will assess the patient. Following assessment, the physicians will determine the next course of action, including possible transfer to Regional West by ground or via AirLink helicopter, or sending the patient to an advanced care facility in

[53] The hospitals serving Alliance, Chadron and Sidney currently have teletrauma capabilities.

the case of a significant burn or other injury. With teletrauma, split-second treatment decisions are possible and Air Link can be dispatched and on the way even before the video consultation has ended. In the meantime, Regional West's trauma team is able to assemble and prepare to treat the trauma victim the minute he or she arrives. Accordingly, all parties in the emergency care chain become active partners with the hope of achieving better patient outcomes.

However, the utility of teleconsultations and teletrauma applications are ultimately bounded by the constraints of the network. Nowhere are the limitations of technological capacity on telehealth and telemedicine clearer than in the Nebraska Panhandle.

In sparsely populated, low-income rural areas, health care providers understand that survival through collaboration makes sense for patients and providers. Medicine in the 21st century entails vast demands for breadth of expertise. Thus, providers in rural areas must take advantage of technology and economies of scale through collaboration, because in most cases, no one hospital itself offers such scale. Because the RNHN hospital consortium creates economies for accessing increasingly sophisticated medical expertise and "shared" patients, the same system is a natural candidate for leveraging the benefits of interconnecting technology.

F. *The RNHN Connectivity Plan*

For rural health providers, the essence of the rural healthcare broadband dilemma is that they need access to a broadband network to provide service and survive but do not have the resources to access the necessary capacities at a reasonable price. RNHN providers are in this situation. To date, they have patched together a solution that allows them to work together and utilize telehealth. Unfortunately, the solution is not adequate for current operational needs, will

not keep up with anticipated growth in services or capacity, and is unreliable. Without capacity and reliability, medical services for rural communities in western Nebraska will go underutilized.

For the rural healthcare providers in the RNHN, such access and capacity will not be financially feasible without the help of the Pilot Program. Not only does the Pilot Program promise to enable rural health care providers to access much needed capacity, but it also positions them to partner with a third party carrier to design and construct a healthcare network and to meet the costly and ongoing maintenance and operation requirements of such a network.

This RNHN plan for connectivity is the result of a thoughtful, pragmatic and continually evolving collaboration with the intent to build upon past endeavors to develop a roadmap for their most ambitious and complex project to date. The plan for (a) connectivity to these nine hospitals, (b) regional connections to facilities in South Dakota, Wyoming and Colorado, and finally (c) the connection to the National LambdaRail dedicated backbone network is not a template that is easily adopted by other organizations. Nevertheless, the process and results that will be yielded from the endeavor will provide useful lessons for the Commission and other organizations. At the same time, it will enable needed care in the form of telehealth and telemedicine to be brought to the rural Panhandle of Nebraska.

The RNHN vision for its role in the Rural Health Care Pilot Program is the interconnection of all the hospitals within the consortium, as well as related clinics in the Panhandle. The 1Gb Ethernet connectivity via fiber proposed in this application is equivalent to over 645 of the T1 lines currently used. Where it may take 30 minutes to transfer a file between hospitals inside of the network, this time can be decreased to mere minutes if not seconds.

Further, as a long-range goal, the RNHN will connect to others in the multi-state area in order to share patient information and to expand the high quality system of care for rural residents.

The goal of this regional consortium of hospitals to improve quality of care and patient safety will be achieved by the proposed fiber buildout. Specifically, it will:

- Enable the exchange of health information among providers;
- Contribute to the viability of partners by identifying and promoting collaborative wins;
- Ensure that all hospitals and providers have the capacity to participate in electronic exchange;
- Continue to promote the vision of a system of care for Panhandle residents;
- Build capacity within the workforce;
- Integrate electronic medical records with other functional systems (decision support systems, CPOE/e-Prescribing[54], results management, laboratory) in all Critical Access Hospitals and Rural Health Clinics through a common process and shared resources, in order to enhance local and regional capacity development toward health information exchange;
- Enable health information exchange systems to provide current information, from all hospitals and rural health clinics, at the point of care; and
- Expand the use of telehealth and telemedicine applications in both clinical and non-clinical settings.

RNHN envisions a regional electronic health information exchange system that will enable providers, patients, and others to share information, communicate orders and results, support evidence-based decision-making, streamline public health disease surveillance and reporting, and enable data management for non-clinical purposes (*e.g.*, billing, quality

[54] Computerized Physician Order Entry ("CPOE") systems are designed to reduce medication errors

management). Information used in the network will be patient-centric (*i.e.*, available where the patient and his/her provider needs it regardless of where the information was originally gathered). Further, the transmission of and access to information by authorized individuals will be through secure systems. Ultimately, this will lead to the creation of infrastructure that will enable all consortium members with technology structures to participate.

G. *Public/Private Partnership to Meet Rural Health Challenges*

Public/private partnerships in areas where fiber connectivity is not otherwise financially feasible are driven by whether operators can extend their networks in such a way that reduces or eliminates the high operating and maintenance costs of the networks for health care providers. For the RNHN, the necessary solution to this dilemma is through an arrangement with a private carrier.

Specifically, the best and only way for the RNHN to build and deploy a health care network for its present needs, and to access advanced health care services, is through a relationship with an experienced local partner. RNHN has identified such a partner in Mobius Communications Company ("Mobius"). Mobius is an ideal partner due to its expertise and ability to provide the fiber infrastructure that RNHN does not have. Uniquely, Mobius and its parent company have provided service in western Nebraska since the 1930s and, most recently, have buried fiber in the area. Although RNHN has experience in utilizing broadband networks, its member hospitals do not have the experience to design or build such a network, nor do they have the ability to maintain and operate it. Thus, an arrangement with a private carrier such as Mobius fills the health care technology/telecommunications-IT gaps of the RNHN to provide the

benefits of telehealth and telemedicine in an area of the country, namely the Panhandle of western Nebraska, where the need is most acute.[55]

The RNHN network to be constructed by Mobius will comprise 24 fiber and related optronics, repeaters and routers. RNHN shall retain exclusive use of 20 of the fibers, and Mobius shall have the right to exclusive use of four of the fibers.[56] Construction and operation of the network will provide capacity of 1 Gb Ethernet between the rural hospitals and 100Mb to other health and human service providers.

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[55] The arrangement will also add to the economic development of the Panhandle. Economic development is intended to raise the standard of living in an area through the creation of wealth in a given region. It is most commonly associated with job creation through governmentally-based recruitment or assistance of business. Economic development can be a major challenge for rural areas due to their isolation, low population density and often meager economic infrastructure. *See* Jo Min, Internet-Based Economic Development For Rural Communities, U.S. Economic Development Administration, (2001), at http://www.eda.gov/ImageCache/EDAPublic/documents/pdfdocs/1g3lr_5f12_5fiowastate_2epdf/v1/1g3lr_5f12_5fiowastate.pdf.

However, the growth of the Internet, particularly with broadband penetration, has made the isolation of rural areas less of a concern, and, in fact has spurred economic growth. With broadband service, rural communities can be competitive and more cost-effective in attracting business opportunity. With broadband, businesses that practice telemedicine, electronic commerce, and back-office functions may find rural communities to be advantageous. *See id*.

In Kearney, Nebraska, a town of 29,000 located east of the Panhandle in the center of the state, broadband deployment has resulted in economic development. After a broadband infrastructure was built in Kearney, the town was able to attract a telemarketing firm to the town. Furthermore, the infrastructure buildout enabled the local college to offer new technology-oriented courses, thereby increasing student opportunity. *See* Min at 4. Kearney now advertises that it is "a center for communications infrastructure and features digital switching, fiber optics, SONET ring, DSL, wireless, and complete business network telecommunications services. Modem pioneers continue to blaze technology trails through partnerships like the Community Networking Institute, the Technology Learning Center, and numerous initiatives to promote info-tech literacy." *See* Kearney Chamber of Commerce, Business and Industry at http://www.kearneycoc.net/Kearney_Information/business_industry/index.htm (last visited May 2, 2007).

So too, through the proposed network, businesses and residential communities alike in the Panhandle will be offered access to bandwidth paid for by Mobius that is not currently available and not financially feasible. Presently, the Panhandle economy is must less diversified than other areas of Nebraska, focusing on agriculture. A poor agricultural year can greatly impact the community in areas from the cost of goods to the ability to afford medical services. *See* Scientific Technologies Corporation, Nebraska Panhandle Community Health Profiles, Exhibit G. As a result, such broadband access will spur additional investments, diversify the Panhandle economy and lead to economic growth in the Panhandle communities that need it the most.

[56] *See* Exhibit D.

In Phase I of the proposed plan, the network will connect the nine member hospitals and their supporting clinics. This phase is the cornerstone of the proposal. This phase is self-sustaining even without the additional phases.

In turn, the planned buildout will proceed with phases two through four in which fiber connections will be made to connect RNHN hospitals with healthcare providers in Colorado, Wyoming, and South Dakota.[57] Phase II will connect RNHN fiber to National LambdaRail ("NLR") and the Medical Center of the Rockies in Loveland, CO.[58] Phase II will also include a connection from Kimball to Cheyenne. Phase III of the plan will further extend the network , from Chadron to Rapid City Regional Hospital in Rapid City, SD. Finally, in Phase IV of the plan, the network will connect a fiber node in Rushville, NE to the Native American Indian healthcare facility in Pine Ridge, SD.

H. *RNHN and the Pilot Program*

In sum, among other things, the RNHN network will be used to accomplish the following objectives:

- Sharing of electronic health information, including laboratory, radiology, patient electronic medical and pharmaceutical records
- Coordination for regional emergency responses
- Access to web-based distance education for health care staff
- Diagnostics to permit immediate responses to patient needs

[57] *See id.*

[58] This connection is vital to connect the RNHN hospitals and clinics to healthcare facilities in Wyoming and northern Colorado. In particular, this will aid the exchange of information for RNHN patients who often are referred to these hospitals for specialty care not available in RNHN hospitals, including orthopedics, surgery and intensive care.

In turn, the Commission will be able to assess two critical elements of telehealth as it contemplates the revision of its rules for Rural Health Care:

1) Can public/private relationships be forged that allow rural health providers sustainable and secure broadband access in rural America?

2) Can a group of rural health care providers work together to fully utilize the benefits of a telehealth broadband network through:

    - Electronic medical records sharing
    - Educational tele-video
    - Emergency Response
    - Teletrauma
    - ASP Applications
    - Remote consultations

This Application presents an opportunity to measure the potential success of working in a full service telehealth environment in one of the most rural areas in America today. Nearly every benefit of broadband connectivity is available for measurement because the RNHN health providers have been working together for 10 years in telehealth and telemedicine and have reached the point where their network connections must be more reliable, affordable and larger to succeed.

The RNHN will submit an annual report to the Commission concerning these and other issues, including statistics on data traffic on the network and an analysis of the effectiveness of fund disbursement under the Pilot Program. Additionally, the primary leadership of the RNHN

will volunteer itself for meetings on an ongoing basis with Commission staff in order to analyze the effectiveness of the program.

The Pilot Program promises an opportunity to enhance patient care in rural Nebraska through the deployment of an advanced network by a consortium of established rural health care providers. Consequently, the experience of a leader in the rural health care field, like RNHN, will be invaluable in providing the Commission with useful information and guidance in the use of funds to deploy advanced networks.

II. Application

Applicant: Rural Nebraska Healthcare Network ("RNHN"). The RNHN is a non-profit consortium of the following nine non-profit and/or public rural health care providers[59] (town populations in brackets) in western Nebraska that have engaged in collaborative projects to improve health care delivery to patients in the Panhandle:

- Box Butte General Hospital (Alliance, Nebraska; est. pop. 8,331)
- Chadron Community Hospital (Chadron, Nebraska; est. pop. 5,320)
- Garden County Health Services (Oshkosh, Nebraska; est. pop. 766)
- Gordon Memorial Hospital (Gordon, Nebraska; est. pop. 1,997)
- Kimball Health Services (Kimball, Nebraska; est. pop. 2,341)
- Memorial Health Center (Sidney, Nebraska; est. pop. 6,442)
- Morrill County Community Hospital (Bridgeport, Nebraska; est. pop. 1,493)
- Perkins County Health Services (Grant, Nebraska; est. pop. 1,225)
- Regional West Medical Center (Scottsbluff, Nebraska; est. pop 14,814).

[59] *See Order* at ¶ 3, fn 4; *see also,* 47 C.F.R. § 54.601(a).

The following responses address the application requirements set forth in paragraph 17 of the Commission's *Order* initiating the pilot program:

1) Identify the organization that will be legally and financially responsible for the conduct of activities supported by the fund:

Rural Nebraska Healthcare Network ("RNHN")
231 South Chestnut
Kimball, NE 69145

The RNHN President can be reached at the following address:

Todd Sorensen, MD (RNHN President)
Regional West Medical Center
4021 Avenue B
Scottsbluff, NE 69361
(308) 630-1723

2) Identify the goals and objectives of the proposed network:

The goal of the proposed network is to provide capacity of 1 Gb Ethernet among the participating rural hospitals, and capacity of 100 Mb to all other health and human service providers in order to enhance a coordinated system of care in the Panhandle of western Nebraska, extending to adjacent states. In particular, the network will:

- Increase and enhance capacity between health care providers to share electronic health information including laboratory, radiology, patient electronic medical and pharmaceutical records.
- Increase capacity for regional emergency responses.
- Increase access to web-based distance education for health care staff.
- Increase diagnostics to permit immediate responses to patient needs.
- Enhance patient safety.
- Allow patient access to consultations with clinicians outside of the Panhandle.
- Improve reliability.

The objective of the proposed network is to deploy a high-speed broadband fiber network that meets these goals, which would not be possible without the funding provided by the Pilot Program. Currently, health care providers in the rural Panhandle of Nebraska use a network that is slow, unreliable and inadequate. The RNHN wants to correct these problems by building a robust fiber upgrade to the existing network.

The existing network consists of a series of T1 lines running between member hospitals and sites in adjacent states with a network hub located at the Regional West Medical Center in Scottsbluff, NE. The proposed network will improve significantly on this network by providing a 1 Gb Ethernet connection between the rural hospitals and by providing capacity of 100 Mb to all other health and human service providers. In turn, the proposed network will relieve the capacity constraints which inhibit the current network.

In this manner, the RNHN will be able to meet the growing broadband needs of medical technology and the health care providers who use that technology to provide quality care to their patients. Stated differently, the network will permit health care providers and their patients throughout the region to have the opportunity to benefit from advanced applications of medicine, research, education, and health information exchange, as well as the ability to provide a rapid and coordinated preparedness response in the event of a local or regional crisis. In so doing, it will provide the Commission with useful information to formulate and implement permanent rural health care rules.

3) Estimate the network's total costs for each year:

Please see Exhibit A for total costs. RNHN respectfully requests support in the amount of eight-five percent (85%) of these costs, that is in the amounts of $850,000.00 in the first funding year ($1,000,000 total cost) and $18,046,942.00 for the second year ($21,655,226 total cost), if the June 30, 2007end date for Funding Year 1 remains in place. However, RNHN is requesting herein a waiver of the deadlines that would otherwise apply for Funding Year 1, as well as other rules waivers.[60]

4) Describe how for-profit network participants will pay their fair share of the network costs:

Any for-profit network participants or users, such as private physician practices, pharmacies and long term care facilities, will pay their fair share of the network costs by paying for capacity at market rates as determined by the direct costs of that portion of the network used by the for-profit participants.

5) Identify the source of financial support and anticipated revenues that will pay for the costs not covered by the fund:

Under this proposal, Mobius Communications, Inc. ("Mobius") will contribute 15% of the cost of the proposal and will design, construct, maintain and operate the network under the direction and supervision of RNHN. In return, Mobius will have exclusive use of four fibers on the 24 fiber network. RNHN has determined that the contribution of Mobius is reasonably equivalent to the at market benefit of the four fibers such that

[60] *See* Exhibit F (Requesting for waiver of Part 54 Rules). If that waiver is granted, RNHN expects to be able to expend approximately 60% of its total construction costs (*i.e.*, $13,593,135.00, of which a grant of 85% would equal $11,554,165) by June 30, 2008.

Mobius will pay its fair share of the network costs. RNHN and Mobius will enter into an agreement similar to that included at Exhibit B, which will memorialize the arrangement.

Mobius has the financial resources, skills and local experience necessary for a partner on this project. Incorporated in 1998, Mobius is a wholly owned subsidiary of the Hemingford Cooperative Telephone Company ("Hemingford"). Hemingford has operated in western Nebraska since it first employed Ms. Mabel Lackey as Chief Operator for 430 patrons in 1930 and continues to serve those communities today.

Hemingford has been at the forefront of technological change in western Nebraska. In 1988, Hemingford plowed its first fiber, connecting Hemingford to US West (now Qwest) facilities. In November 1996, Hemingford became one of the first rural carriers in the nation to offer dial-up Internet service. Then, beginning in 1999, Hemingford, embarked on a multi-year fiber optic upgrade. In 2000, 170 miles of fiber were plowed for a digital loop carrier system. By extending fiber optic cable from the central office to strategically placed huts (fiber-to-the-node), Hemingford became the first rural independent telco in Nebraska and possibly the nation to offer high-speed DSL Internet to all customers, even those living 40 miles from town.

Mobius was formed by Hemingford in 1998 to provide end user DSL and other competitive services. Mobius will have access to the resources of Hemingford on a cost basis.

Mobius and Hemingford clearly have the ability to design, construct, maintain and operate a fiber network, as well as the ability to identify and redress possible service problems. Indeed, leveraging its equipment and expertise, Hemingford prides itself on a

service history of quick response to service disruption or outage.[61] For example, in September 2006, a cut of 88 fibers occurred at 11:45AM and service was restored by 10:00PM along with a complete splice a few hours later. Likewise, in 2005, service was restored within 12 hours following a cut of 60 fibers.

6) List the health care facilities that will be included in the network:

Initially, the health care facilities that will be included in the network are the members of RNHN. It is assumed, however, that as each project phase is completed, additional health care facilities will gain access to the network. RNHN members currently include:

- Box Butte General Hospital (Alliance, Nebraska; est. pop. 8,331)
- Chadron Community Hospital (Chadron, Nebraska; est. pop. 5,320)
- Garden County Health Services (Oshkosh, Nebraska; est. pop. 766)
- Gordon Memorial Hospital (Gordon, Nebraska; est. pop. 1,997)
- Kimball Health Services (Kimball, Nebraska; est. pop. 2,341)
- Memorial Health Center (Sidney, Nebraska; est. pop. 6,442)
- Morrill County Community Hospital (Bridgeport, Nebraska; est. pop. 1,493)
- Perkins County Health Services (Grant, Nebraska; est. pop. 1,225)
- Regional West Medical Center (Scottsbluff, Nebraska; est. pop 14,814).

[61] Mobius has significant fiber-related equipment and experience available including: two fusion fiber splicers, one fiber splicing trailer, and one fiber splicing tent. In addition, Mobius has the tools and expertise to identify and redress possible service problems and maintain fiber. Mobius has an OTDR test tool that surveys buried fiber for damage. Mobius also has locators, a Ditch Witch trencher backhoe, a Ditch Witch boring unit, eight service vehicles and maintains fiber splices that are ready to be deployed in case of a cut. Finally, Mobius has eleven technicians certified in fiber-splicing. These employees are re-certified on splicing in two-year intervals.

7) Provide the address, zip code, Rural Urban Commuting Area (RUCA) code and phone number for each health care facility participating in the network:

Box Butte General Hospital
2101 Box Butte Avenue
Alliance, NE 69301
Dan Griess, CEO
Phone: 308.762.6660
dgriess@bbgh.org
RUCA-7

Chadron Community Hospital
821 Morehead
Chadron, NE 69337
Harold Krueger, CEO
RNHN Vice President
PH: 308.432.5586
ceo@chadronhospital.com
RUCA-7

Garden County Health Services
PO Box 320
Oshkosh, NE 69154
Gerri Nelson, CEO
Phone: 308.772.3283
ceo@gchealth.org
RUCA-10

Gordon Memorial Hospital
300 E 8th Street
Gordon, NE 69343
Kay Garcia, CEO
Phone: 308.282-0401
ceo@gordonmemorial.org
RUCA-10

Kimball Health Services
505 S Burg
Kimball, NE 69145
Julie Schnell, CEO
Phone: 308.235.1952 x675
ceo@kimballhealth.org
RUCA-10

Memorial Health Center
645 Osage Street
Sidney, NE 69162
Danielle Gearhart, CEO
Phone: 308.254-5825
dgearhart@memorialhealthcenter.org
RUCA-7

Morrill County Community Hospital
PO Box 579
Bridgeport, NE 69336-0579
Julie Morrow, CEO
RNHN Secretary Treasurer
Phone: 308.262.1616
ceo@morrillcountyhospital.org
RUCA-10.5

Perkins County Health Services
PO Box 26
Grant, NE 69140
Pam Holm, Administrator
Phone: 308.352.7200
ceo@pchsgrant.com
RUCA-10

Regional West Medical Center
4021 Avenue B
Scottsbluff, NE 69361
Todd Sorensen, M.D., CEO
RNHN President
Phone 308.630.1723
sorenst@rwmc.net
RUCA-4

8) Indicate previous experience in developing and managing telemedicine programs:

RNHN and its members have experience in developing and managing telemedicine programs. For instance, RNHN members are currently linked to the Nebraska Telehealth Network ("NTN"). As part of the NTN, they have developed and managed telemedicine programs involving remote diagnostics for radiology as well as dental, cardiology and mental health consultations.

The member hospitals also have experience using telehealth applications for training and meetings. Training sessions for becoming a Certified Professional in Health Information Technology and Certified Professional in Electronic Health Records have been held throughout the RNHN. As a result, the Nebraska Panhandle has the highest number of health information technology certified professional and electronic health records *per capita* in the United States. In addition, training programs have been offered in project management, vendor selection, process mapping, and skill training.

Significantly, each member of the RNHN has an information technology specialist or an Information Technology Department trained to operate and maintain the equipment required for telemedicine applications. The region currently has over 60 Certified Professionals in Health Information Technology, 30 persons with extensive project management training, and a regional organizational structure for shared leadership that

enhances project success. Further, as demonstrated in Exhibit E, the hospitals currently have IT resources in place to ensure the success of telehealth and telemedicine programs.

To date, the IT resources across the RNHN facilities have been used in a shared and functional manner, due to the coordination of an IT Leadership Team. For example, in 2003, three of the Critical Access Hospitals with functional secure systems allocated their portion of Small Hospital Improvement Funds ("SHIP") ($30,000 total) to other smaller hospitals with greater needs. Similarly, when a software upgrade necessitated the change-out of 30 computers at one of the larger hospitals, the state-of-the-art computers were then reallocated to a smaller RNHN hospital with fewer resources.

SHIP funds have been designated for the ongoing development of common IT infrastructure within each Critical Access Hospital. This common infrastructure is the foundation of secure, functional internal systems and the sharing of health information between the systems. To date, over $290,000 in SHIP funds has been allocated to this common work, which includes hardware and software purchases, retaining a regional IT consultant, and the formation of the IT Leadership Team. As noted above, the communication and relationship development of the IT Leadership Team has resulted in significant resource-sharing, including the reallocation of hardware between hospitals, and the continuing development of the regional system.

Finally, the RNHN members have dedicated themselves to making health IT a human resources priority. In 2003, there were 4.2 Full Time Employee ("FTW") IT staff in the Critical Access Hospitals, all with varying levels of skills and training. In January 2007, there were 10 FTE IT staff in the eight Critical Access Hospitals with additional IT staff

at Regional West Medical Center, all with common skills and training. The dedication to increasing IT resources over the last four years has benefited the hospitals and local clinics in the design of their systems, trouble-shooting of problems, and work toward the goal of interoperable systems. Above all, with such leadership and expertise in place, the fiber build proposed by this Application will lead to greater and expanded use of telehealth and telemedicine applications in an area of the country most in need.

9) Provide a project management plan outlining the project's leadership and management structure, as well as its work plan, schedule, and budget:

See attached Exhibit C (Project Management Plan) and Exhibit D (Budget).

10) Indicate how the telemedicine program will be coordinated throughout the state or region:

The RNHN is a non-profit membership organization of nine non-profit hospitals in the Panhandle of Nebraska. A board of Directors that includes the Chief Executive Officer of each member hospital governs the RNHN. The RNHN is coordinated by a Director with the President of the RNHN presiding at all meetings and supervising the affairs of the RNHN with the support of a Secretary and Treasurer. Other subordinate officers and committees may be designated as deemed necessary by the board.

The telemedicine program will be coordinated through the system of Regional Leadership Teams within the RNHN.

Regional Leadership Teams

Each organizational member has designated representatives to five Region-Wide Leadership Teams (Information Technology, Organizational, Financial, Clinical,

Training & Education teams). These teams, chartered by the Primary Leadership[62], will draft regional priorities, policies and procedures; advise and evaluate the process; and serve as an information sharing forum regarding the work of the hospitals. Members cover the widest breadth of organizational professional involvement, including CEO's, CFO's, COO's, Directors of Nursing, HIPAA officers, education coordinators, information technology directors, nursing home staff, psychologists, lab technicians, public health administrators, nurses, project managers, patient accounts directors, health information managers, and admissions/discharge specialists.

Roles and Communications

This structure will allow for role specificity and iterative communications among the Leadership Teams. Overlapping team members, staff communications, electronic mail lists, website, and joint meetings will ensure that participants at each level will readily be apprised of the work of the other teams.

The successes of the RNHN members in developing services and integrated systems of care are in large part based on the time and energy spent in developing trust and relationships within and between these organizations toward a common vision. The members also know how to work productively with consultants to bring in needed expertise.

[62] *See* Exhibit C.

Resources

The members have committed over $1 million annually to support the implementation of health information exchange. Currently, the RNHN is collaborating to create the local infrastructure to participate in the regional health information exchange.

The CEOs of all participating organizations have actively participated in the present planning effort. They regularly attend monthly meetings (each lasting half a day) and have agreed to align their IT investments so that they are compatible to the system being planned.

RNHN members have pooled over $200,000 of their individual SHIP funds to upgrade each hospital to core technological functionality. This provides a foundation for health information exchange and has already generated approximately $180,000 in cost savings through joint purchasing over the past year.

All hospitals, even the smallest and most rural, are creating internal human resource capacity for electronic health information exchange by designating and training an information technology lead. Together, all the information technology leads have formed a potent region-wide resource team. They have jointly installed systems at hospitals, are developing training curricula, and are pursuing a vigorous schedule of certifications and accreditation.

11) Indicate to what extent the network can be self-sustaining once established:

The sustainability of the entire project will be a direct result of RNHN and Mobius working together. If this project were attempted by either party separately, it would be unsustainable. The hospitals could not afford the initial investment and the operating

costs and Mobius could not develop enough business from the communities it serves to invest in the fiber facility. Working together, both the hospitals and Mobius can utilize each other's strengths and opportunities to make this fiber connectivity possible.

Mobius is paying for 15% of the project that would not be funded by the Commission and 100% of the operating costs in exchange for four fibers. Mobius will utilize the fibers to cover internal connection needs and to provide commercial connections to businesses and residents in the communities.

III. Conclusion

RNHN respectfully requests that the Commission grant this Application, and funding of 85% of the construction and operational costs of its proposed network as set forth above.

Respectfully submitted,

RURAL NEBRASKA HEALTHCARE NETWORK

/s/ Todd S. Sorensen, MD

Todd S. Sorensen, MD
President
Rural Nebraska Health Network
231 South Chestnut
Kimball, NE 69145
(308) 630-1723

May 7, 2007

EXHIBIT A

Estimate Of The Network's Total Costs For Each Year

10 YEAR INVESTMENT AND OPERATING COST PROJECTION

INVESTMENT COSTS

INVESTMENT COST COVERAGE	FUNDING YEAR 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
MOBIUS	$ 150,000	$ 3,248,284	$ -	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000
RNHN	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
USAC	$ 850,000	$ 18,406,942	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL INVESTMENT COST	**$ 1,000,000**	**$ 21,655,226**	**$ -**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**

OPERATING COSTS

OPERATING COST COVERAGE	FUNDING YEAR 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
MOBIUS	$ -	$ 418,873	$ 424,689	$ 430,680	$ 436,850	$ 443,206	$ 449,752	$ 456,495	$ 463,439	$ 470,593	$ 477,960
RNHN	$ -	$ 10,000	$ 10,300	$ 10,609	$ 10,927	$ 11,255	$ 11,593	$ 11,941	$ 12,299	$ 12,668	$ 13,048
USAC	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL OPERATING COSTS	**$ -**	**$ 428,873**	**$ 434,989**	**$ 441,289**	**$ 447,778**	**$ 454,461**	**$ 461,345**	**$ 468,435**	**$ 475,738**	**$ 483,260**	**$ 491,008**

Blue costs are paid for by Mobius
Black costs are paid for by Hospitals
Red costs are paid for by USAC

10 YEAR INVESTMENT AND OPERATING COST PROJECTION DETAILS

INVESTMENT COSTS

INVESTMENT COST COVERAGE	FUNDING YEAR 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
MOBIUS	$ 150,000	$ 3,248,284	$ -	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000
RNHN	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
USAC	$ 850,000	$ 18,406,942	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL INVESTMENT COST	**$ 1,000,000**	**$ 21,655,226**	**$ -**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**
INVESTMENT COST DETAIL											
Fiber Cost	$ -	$ 16,198,704	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Transport Electronics	$ -	$ 3,459,902	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Engineering	$ 1,000,000	$ 1,996,620	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL NETWORK DESIGN AND INSTALLATION INVESTMENT	**$ 1,000,000**	**$ 21,655,226**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
TOTAL NETWORK FIBER REPAIR (Highway moves/repairs)	$ -	$ -	$ -	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000

OPERATING COSTS

OPERATING COST COVERAGE	FUNDING YEAR 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
MOBIUS	$ -	$ 418,873	$ 424,689	$ 430,680	$ 436,850	$ 443,206	$ 449,752	$ 456,495	$ 463,439	$ 470,593	$ 477,960
RNHN	$ -	$ 10,000	$ 10,300	$ 10,609	$ 10,927	$ 11,255	$ 11,593	$ 11,941	$ 12,299	$ 12,668	$ 13,048
USAC	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL OPERATING COSTS	**$ -**	**$ 428,873**	**$ 434,989**	**$ 441,289**	**$ 447,778**	**$ 454,461**	**$ 461,345**	**$ 468,435**	**$ 475,738**	**$ 483,260**	**$ 491,008**
OPERATING COST DETAIL											
PHASE 1 - RURAL NEBRASKA HEALTH NETWORK											
Network Management and Maint	$ -	$ 100,000	$ 103,000	$ 106,090	$ 109,273	$ 112,551	$ 115,927	$ 119,405	$ 122,987	$ 126,677	$ 130,477
Property Tax (20 year average)	$ -	$ 33,873	$ 34,889	$ 35,936	$ 37,014	$ 38,124	$ 39,268	$ 40,446	$ 41,660	$ 42,909	$ 44,197
Insurance	$ -	$ 40,000	$ 41,200	$ 42,436	$ 43,709	$ 45,020	$ 46,371	$ 47,762	$ 49,195	$ 50,671	$ 52,191
Fiber Training	$ -	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
Vehicles, tools, equipment	$ -	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
Miscellaneous	$ -	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
Power outside network	$ -	$ 20,000	$ 20,600	$ 21,218	$ 21,855	$ 22,510	$ 23,185	$ 23,881	$ 24,597	$ 25,335	$ 26,095
Power inside Hospitals	$ -	$ 10,000	$ 10,300	$ 10,609	$ 10,927	$ 11,255	$ 11,593	$ 11,941	$ 12,299	$ 12,668	$ 13,048
TOTAL PHASE 1	**$ -**	**$ 278,873**	**$ 284,989**	**$ 291,289**	**$ 297,778**	**$ 304,461**	**$ 311,345**	**$ 318,435**	**$ 325,738**	**$ 333,260**	**$ 341,008**
PHASE 2 - DENVER (All of previous phase costs plus the following)											
Dark Fiber Maintenance and Collocation - Denver to Cheyenne	$ -	$ 75,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000
NLR Connectivity	$ -	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
TOTAL PHASE 2	**$ -**	**$ 125,000**	**$ 125,000**	**$ 125,000**	**$ 125,000**	**$ 125,000**	**$ 125,000**	**$ 125,000**	**$ 125,000**	**$ 125,000**	**$ 125,000**
PHASE 3 - RAPID CITY (All of previous phase costs plus the following)											
Remote Location Managment & Maintenance	$ -	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
TOTAL PHASE 3	**$ -**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**
PHASE 4 - PINE RIDGE (All of previous phase costs plus the following)											
Included in Phase 3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL PHASE 4	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Blue costs are paid for by Mobius
Black costs are paid for by Hospitals
Red costs are paid for by USAC

EXHIBIT B

TERM SHEET

TERM SHEET

Design, Construction and Operation of a Broadband Network
by the
Rural Nebraska Healthcare Network, Inc., a , non-stock, non-profit organization,
and
Mobius Communications Company, Inc.

This Term Sheet sets forth certain nonbinding understandings and certain binding agreements between the Rural Nebraska Healthcare Network, Inc., a non-stock, non-profit organization ("RNHN") and Mobius Communications, Inc. ("Mobius") with respect to an agreement between the parties for the design, construction, maintenance and operation of a healthcare network under the Rural Health Care Pilot Program of the Federal Communications Commission ("Commission") as set forth in the Commission's Order (Commission 06-144) released on September 29, 2006 in WC Docket No. 02-60 and in its Order on Reconsideration (Commission 07-6) released on February 6, 2007 in that same docket (collectively, the "Pilot Program").

PART ONE – NONBINDING PROVISIONS

The following numbered paragraphs of this Term Sheet (collectively, the "Nonbinding Provisions") reflect the parties' mutual understanding of the matters described in them, but each party acknowledges that the Nonbinding Provisions are not intended to create or constitute any legally binding obligation between the parties, and neither party shall have any liability to the other party with respect to the Nonbinding Provisions unless and until fully integrated, definitive agreement(s) (the "Definitive Agreement(s)") are prepared, authorized, executed and delivered by each of the parties. If the Definitive Agreement(s) are not prepared, authorized, executed or delivered for any reason, neither party shall have any liability to the other party based upon, arising from or relating to the Nonbinding Provisions.

1. Project

The project shall be the construction and operation of a fiber optic network to initially provide capacity of 1 Gig Ethernet among certain healthcare providers and connectivity to the national backbone network of National Lambda Rail, Inc., all as shown on the map attached hereto as Attachment 1. The network shall comprise 24 fibers (the "Fiber Pairs") and related optronics, repeaters and routers (the "Equipment"), as more fully described on Attachment 2 (the "Network"). Mobius shall be responsible for the design, construction, maintenance and operation of the Network.

2. Funding

Funding shall be based on the budget for the construction, maintenance and operation of the Network, including, without limitation, amounts for design of the Network, acquisition of all fiber and equipment necessary for the Network, labor necessary for construction of the Network, and all related matters, including fees associated with rights to use public rights of way for the Network, and is attached hereto as Attachment 3**.** Based on that budget, RNHN shall make application to the FCC for funding in the amount equal to 85% of the budgeted cost of the design and construction of the Network. Subject to receipt of such funding from the FCC upon reasonable terms and conditions, Mobius shall provide funding for 15% of the budgeted cost of the design and construction of Phase I of the Network as described in the application and, subject to approval by Mobius, will provide funding for 15% of the budgeted cost of the design and construction of any remaining Phases of the Network. The funding received from the Commission will be used solely for the purposes set forth in RNHN's application to the Commission.

3. Use of Network

In order to ensure that the funding by the Commission under the Pilot Program is restricted to the purpose for which it is intended and to properly recognize the cash funding by Mobius as set forth in paragraph 2 above, as well as its assumption of the operations and maintenance costs of the Network as set forth in paragraph 4 below, RNHN shall have the right to the exclusive use of 20 Fibers and Mobius shall have the right to the exclusive use of 4 Fibers. The Equipment shall be shared by RNHN and Mobius as necessary to use the Fibers allotted to them. The use of the Network by the parties shall comply in all respects with the rules and regulations of the Commission.

4. Operations and Maintenance

Mobius shall have full responsibility for, and shall bear all costs associated with, the operation and maintenance of the Network.

5. Certain Restrictions

Neither party shall have the right to transfer any interest in the Network to any other individual or entity, and shall not permit any other individual or entity to use the Network without the prior written approval of the other party. Upon any increase in capacity of the Network, the parties shall enter into further agreements with respect to the use of such capacity.

PART TWO – BINDING PROVISIONS

Upon execution of this Term Sheet by both parties, the following lettered paragraphs (the "Binding Provisions") will constitute the legally binding and enforceable agreement of the parties (in recognition of the significant costs to be borne by the parties in pursuing this proposed transaction and in consideration of their mutual undertakings as to the matters described herein):

A. Nonbinding Provisions Not Enforceable

The Nonbinding Provisions do not create or constitute any legally binding obligations between the parties, and neither party shall have any liability to the other party with respect to the Nonbinding Provisions until the Definitive Agreement(s), if they are successfully negotiated, are executed and delivered by and between the parties. If the Definitive Agreement(s) are not successfully negotiated, executed and delivered for any reason, neither party shall have any liability to the other party based upon, arising from or relating to the Nonbinding Provisions.

B. Definitive Agreement(s)

Upon the execution of this Term Sheet, the parties will proceed to prepare and negotiate the Definitive Agreement(s) and all documents necessary to effect the transactions contemplated by this Term Sheet.

C. Confidential Information

Any information furnished to or obtained by either party or its representative(s) in connection with the transaction contemplated by this Term Sheet that, by its nature, is confidential to the providing party shall be maintained in confidence by the receiving party, who shall not use such information except in connection with the transaction contemplated by this Term Sheet.

D. Costs

Except for the payment of attorneys' fees which shall be divided equally between the parties, each party shall be responsible for, and bear all of, its own costs and expenses, including without limitation, expenses of its representatives, incurred at any time in connection with pursuing or consummating the transactions proposed by this Term Sheet.

E. Termination

This Term Sheet is predicated on the successful application of RNHN for funding under the Pilot Program. In the event that RNHN does not apply for funding under the Pilot Program on or before the date set by the Commission for such application, or in the event that RNHN does apply, but is granted less than $19,256,942, or in the event the terms and conditions of funding by the Commission are unreasonable, this Term Sheet shall automatically terminate without further action by either party. In addition, the Binding Provisions may be terminated upon written notice by either party to the other party; provided that no such termination shall affect the liability of a party for breach of any of the Binding Provisions prior to such termination. Upon termination, the parties shall have no further obligations hereunder, except for the treatment of confidential information described in Paragraph C and D of the Binding Provisions, both of which shall survive any such termination.

IN WITNESS WHEREOF, each of the parties has caused this Term Sheet to be duly executed on its behalf as of May __, 2007.

RURAL NEBRASKA HEALTHCARE NETWORK	MOBIUS COMMUNICATIONS COMPANY, INC.
By:_____	By:_____

EXHIBIT C

Project Management Plan

Project Management Plan

As shown below, the primary leadership of the project will be the members of RNHN; in particular, the Chief Executive Officers of all nine hospitals as well as Information Technology personnel from each hospital. Consulting leadership will be by Mobius. Mobius has been designing, constructing, maintaining and operating direct-bury fiber services since 1988. Mobius employs an Outside Plant Manager with 26 years of experience in facility operations, project designs, installations and employee management. In addition, Mobius will have a skilled team of technicians as well as a construction team assigned to the project.

Project Leadership and Management Structure

PRIMARY LEADERSHIP: **Hospital and RNHN Leadership** **Management Structure** **Todd Sorensen, MD**	 RNHN, President
Hospital Chief Executive Officers **Dan Griess, CEO** **Harold Kruegar, CEO** **Gerri Nelson, CEO** **Kay Garcia, CEO** **Danielle Gearhart, CEO** **Julie Morrow, CEO** **Pam Holm, Adminstrator** **Todd Sorensen, MD** **Julie Schnell, CEO**	 Box Butte General Hospital Chadron Community Hospital Garden County Health Services Gordon Memorial Hospital Memorial Health Center Morrill County Community Hospital Perkins County Health Services Regional West Medical Center Kimball County Health Services
IT Hospital Network **Jim Parks, Mandy Whaley** **Anna Turman, Jordan Raben** **Dee Dee Waltman** **Tony Hindman** **Dick Whittemore** **Connie Christensen, Dale Bentley** **Tim Colglazier** **Daryl Brisco, Perry Delzer** **Nicole Neilan, Doug Hoppes**	 Box Butte General Hospital Chadron Community Hospital Garden County Health Services Gordon Memorial Hospital Memorial Health Center Morrill County Health Services Perkins County Health Services Regional West Medical Center

CONSULTING LEADERSHIP	
Mobius Communications Company Management structure; Buried fiber leadership Theron Jensen; General Manager	11 years, Company Manager
Tonya Mayer; Financial Specialist	12 years, Fiscal Agent, Financial Manager
Randy Dannar; Outside Plant Manager	26 years, facility operations, project designs
Kory Haas; IT Specialist	10 years, IT development, Internet Networking
12 Trained fiber technicians	1 to 20 years
PROJECT LIAISONS	
Boni Carrell, RNHN	
Joni Jespersen, Mobius	4 years, grant administration

Project Work Schedule

7 Days From Approval
Meet with RVW Inc. design and engineering firm
14 DAYS FROM APPROVAL
Meet with RNHN IT Group to finalize the project plans
20 DAYS FROM APPROVAL
Engineering, planning and design (3 to 4 months)
20 DAYS FROM APPROVAL
Application to the State of Nebraska; highway right-of-way release for fiber plow
90 to 150 DAYS FROM APPROVAL
Bid letting for the project
180 DAYS FROM APPROVAL
Receive bids and select the construction company for the direct bury fiber
220 DAYS FROM APPROVAL
Begin construction of direct bury fiber
550 DAYS FROM APPROVAL Job completion

EXHIBIT D

Budget

Budget

FACILITY DESIGN AND INSTALLATION

Description	Total Cost	Fiber Cost	Transport Electronics	Engineering
PHASE 1 - RURAL NEBRASKA HEALTH NETWORK				
Connect 9 hospitals and 20 clinics	$ 14,184,060	$ 10,148,583	$ 2,185,383	$ 1,850,095
Project Management	$ 425,522			$ 425,522
Spare Equipment	$ 500,000		$ 500,000	
TOTAL PHASE 1	**$ 15,109,582**	**$ 10,148,583**	**$ 2,685,383**	**$ 2,275,617**
PHASE 2 - DENVER				
Connect Kimball, NE to Cheyenne, WY	$ 2,825,130	$ 2,060,696	$ 395,939	$ 368,495
Connect Denver, CO to Cheyenne, WY (Dark Fiber Purchase)	$ 450,000	$ 450,000	$ -	$ -
Connect Denver, CO to Cheyenne, WY (Transmission on Dark F	$ 100,000	$ -	$ 100,000	$ -
Connect the Loveland, CO Hospital to the Dark Fiber	$ 1,320,000	$ 1,320,000	$ -	$ -
Project Management	$ 93,903		$ 93,903	
TOTAL PHASE 2	**$ 4,789,033**	**$ 3,830,696**	**$ 589,842**	**$ 368,495**
PHASE 3 - RAPID CITY				
Connect Chadron, NE to Rapid City, SD	$ 2,296,760	$ 1,914,478	$ 82,704	$ 299,577
Project Management	$ 45,935		$ 45,935	
TOTAL PHASE 3	**$ 2,342,695**	**$ 1,914,478**	**$ 128,640**	**$ 299,577**
PHASE 4 - PINE RIDGE				
Connect Pine Ridge, SD	$ 405,800	$ 304,948	$ 47,922	$ 52,930
Project Management	$ 8,116		$ 8,116	
TOTAL PHASE 4	**$ 413,916**	**$ 304,948**	**$ 56,038**	**$ 52,930**
TOTAL PROJECT	**$ 22,655,226**	**$ 16,198,704**	**$ 3,459,902**	**$ 2,996,620**

FACILITY DESIGN AND INSTALLATION

- Mobius pays for 15% of all design and installation costs.
- Mobius receives 4 fibers and 15% of transmission equipment.
- Beginning in year 2009, an estimated $150,000 per year will be spent by Mobius to cover fiber replacement costs associated with highway maintenance and upgrades.

OPERATING COSTS

Description		Annual Cost
PHASE 1 - RURAL NEBRASKA HEALTH NETWORK		
Network Management and Maint		$100,000
Property Tax (20 year average)		$33,873
Insurance		$40,000
Fiber Training		$10,000
Vehicles, tools, equipment		$50,000
Miscellaneous		$15,000
Power outside network		$20,000
Power inside Hospitals		$10,000
TOTAL PHASE 1	**$**	**278,873**
PHASE 2 - DENVER (All of previous phase costs plus the following)		
Dark Fiber Maintenance and Collocation - Denver to Cheyenne		$75,000
NLR Connectivity		$50,000
TOTAL PHASE 2	**$**	**125,000**
PHASE 3 - RAPID CITY (All of previous phase costs plus the following)		
Remote Location Managment & Maintenance		$25,000
TOTAL PHASE 3	**$**	**25,000**
PHASE 4 - PINE RIDGE (All of previous phase costs plus the following)		
Included in Phase 3	$	-
TOTAL PHASE 4	**$**	**-**
TOTAL PROJECT	**$**	**428,873**

Costs in blue are paid by Mobius
Costs in black are paid by Hospitals

OPERATING COSTS

- Mobius pays all the operating costs for all 4 phases for 20 years except the Hospital and Clinic internal power costs– the Net Present Value of the costs covered by Mobius assuming a 3% growth in costs per year and a 9% cost of money is $4,879,771.
- Mobius will lease and pay for the Dark Fiber from Cheyenne to Denver for 20 years – 100% of annual dark fiber lease is paid by Mobius
- Mobius pays 100% of annual connection costs ($50,000) for the National Lambda Rail connectivity and utilizes 15% of the connection capacity
- Fiber repair and replacement costs are paid by Mobius for 20 years. No replacement costs are included in the operating costs

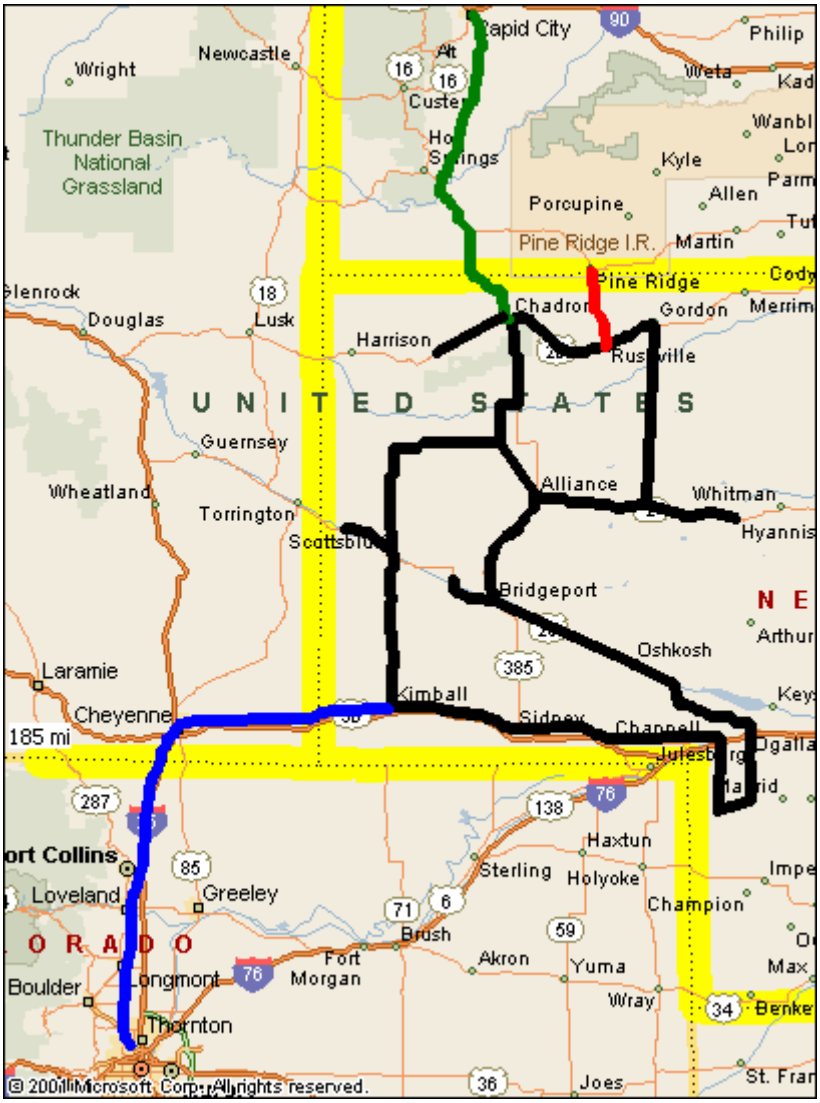

Figure 3: Proposed RNHN Fiber Path

FACILITY DESIGN, INSTALLATION AND OPERATING DESCRIPTION

PHASE I – RURAL NEBRASKA HEALTH NETWORK FIBER – (Black lines in the diagram above)

- Connects all 9 hospitals and 20 clinics in western Nebraska
- This initial phase is self sustaining without the other additional phases.
- Mobius pays for 15% of the total costs ($2,266,437) of this phase
- Mobius receives 15% of fibers and equipment from RNHN
- 24 fibers and transmission equipment between hospitals and clinics

PHASE II – DENVER – (Blue lines in the diagram above)

- Connects the Rural Nebraska Health Network's Fiber Facilities to National Lambda Rail (NLR) and Heart of the Rockies Hospital in Loveland, Colorado
- 1 Gig connectivity to NLR and Heart of the Rockies
- 24 Fiber Build from Kimball to Cheyenne
- Build 24 Fiber from Dark Fiber location in Loveland to Heart of the Rockies Hospital
- Mobius receives 15% of fibers and equipment from RNHN from Kimball to Cheyenne
- Mobius pays for 15 % of the total costs ($718,355) of this phase – this includes the one time fee for dark fiber and transmission equipment for dark fiber
- Mobius and RNHN co-mingle traffic on dark fiber – this is the only location in the network that traffic is co-mingled
- 360 Communications, Level 3 and Willtel (Purchased by Level 3) have dark fiber available from Cheyenne to Denver.

PHASE III – RAPID CITY – (Green lines in the diagram above)

- Connects the RNHN Fiber Facilities to Rapid City Regional Hospital in Rapid City, South Dakota
- 24 Fiber Build from Chadron to Rapid City
- Mobius pays for 15% of the total costs ($351,404) of this phase
- Mobius receives 15% of fibers and equipment from RNHN
- 24 fibers and transmission equipment between Chadron, Nebraska and Rapid City, South Dakota

PHASE IV – PINE RIDGE – (Red lines in the diagram above)

- Connects the RNHN fiber node to Pine Ridge Reservation Hospital in Pine Ridge, South Dakota
- 24 Fiber Build from Rushville, Nebraska to Pine Ridge, South Dakota
- Mobius pays for 15% of the total costs ($62,087) of this phase
- Mobius receives 15% of fibers and equipment from RNHN
- 24 fibers and transmission equipment between Rushville, Nebraska and Pine Ridge, South Dakota

Fiber Design Assumptions

- 24 fiber network
- Fiber path is ringed in Phase I to provide reliability.
- Hospitals are connected with 10 Gig shared network and 1 Gig connectivity to the clinics – considering the shared use, this design results in 1 Gig capacity per hospital and 100 Meg per clinic
- Fiber equipment and installation will be bid.
- Roughly $1,000,000 of Engineering and staking can be completed in 2007 with the balance in 2008.
- Fiber will be buried in state highway right of ways and pricing is based off of rough designs on state highway maps. More detailed designs will result in greater accuracy.

- All construction costs were prepared by RVW Inc. a Columbus Nebraska corporation. RVW has extensive engineering experience in fiber design.
- Pricing includes transport electronics only. Costs of internal network equipment (i.e. routers, switches, etc.) are not included.

EXHIBIT E

Current IT Resources

Current IT Resources*

	BBGH Alliance	**CCH** Chadron	**GCHS** Oshkosh	**GMH** Gordon	**KHS** Kimball	**MHC** Sidney	**MCCH** Bridgeport	**PCHS** Grant	**RWMC** Scottsbluff
IT Person	Jim Parks Mandy Whaley	Anna Turman	Dee Dee Waltman	Tony Hindman	Nicole Neilan Tim Danna	Lupe Torres	Connie Christensen	Tami Sorensen	Lis Bewley
IT Staff Training	2004	2004	2004	2004	X	2004	2004	2004	X
IT System Engineer	2004	2004	2003	2004	X	2004	2004	2004	X
Staff Training	2004	2004	2004	2004	2004	2004	2004	2004	X
Technology Planning	2004	2004	2003	07-04	X	X	2004	07-04	X
Wired Network	X	2004	2003	2005	X	X	X	2005	X
Internet Bandwidth Down/Up	1.5/512	06-04 1.1/830	2003 1.5/384	1.0/1.0	1.5/384		09-04 2.0/512	512/512	2.5/2.5
Internet Provider	Mobius	Qwest	Sprint	Great Plains	Sprint	Qwest	Charter	Great Plains	Action
Local Telco Provider	Allo Communications	Orbitcom	Sprint	Great Plains	Sprint	ATT	NTT	Great Plains	Sprint
Secure Firewall	Firebox	07-04 Firebox	2003 Firebox	11-04 Firebox	Firebox	Firebox Sonicwall	09-04 Firebox	10-04 Firebox	Cisco Sonicwall
Internet Content Filtering	12-04 Firebox	06-04 Firebox	2003 Firebox	03-05 Firebox	SurfControl	St Bernard			Sonicwall
Corporate Anti Virus	09-04 Symantec	07-04 Symantec	2003 Symantec	02-05 Symantec	Symantec	Symantec	09-04 Symantec	10-04 Symantec	X Symantec
Software Updating	X	08-04	2003	12-04	X	X	09-04	10-04	X
Remote Access	X	06-04	2003	11-04	X	X	09-04	10-04	X
File Server	10-04 W2003	09-04 W2003	10-04 W2003	02-05 W2003	W2003	W2000	09-04 W2003	10-04 W2003	W2000
Security Policies	09-04	09-04	10-04	12-04	X	X	09-04	10-04	X
Mail Server	10-04 Exchange 2003 Std	09-04 Exchange 2003 Std	10-04 Exchange 2003 Std	02-05 Exchange 2003 Std	Exchange 2000 Std	07-05 Exchange 2003 Std	02-05 Exchange 2003 Std	10-04 Exchange 2003 Std	Exchange 5.5 Std
Mail Server Anti Virus	Symantec Mail Security	Symantec Mail Security			Symantec Mail Security	Symantec Mail Security		Symantec Mail Security	Norton Anti Virus for Exchange
E-mail Gateway Content and Spam Filtering	Firebox Mdaemon	09-04 Firebox Mdaemon	2003 Firebox Mdaemon	02-05 Firebox Mdaemon	Firebox Mdaemon		Firebox Mdaemon		Barracuda 2005
Intranet	07-05	07-05	07-05	07-05	X			07-05	
Connected Sites	2	9		1	2	2	2		1
Terminal Server	05-05	08-05			06-05	1			1

	BBGH Alliance	**CCH** Chadron Hosp/WCHR/PP			**GCHS** Oshkosh	**GMH** Gordon	**KHS** Kimball	**MHC** Sidney	**MCCH** Bridgeport	**PCHS** Grant	**RWMC** Scottsbluff
Networked Copiers											6
Networked Multi Function Copiers (Fax, Scanner, Printer)					1	1	7	18	1	1	6
Network faxing (Faxing from Computer)								3		2	6

Network Printers	20	3			1	1	7	27	1	1	150
Printers attached to workstations	4	43	28	1	12		20	10	10	15	5
Wireless Network	10-04		X				X	X	X		X
LCD/DLP Projector	2	2	1				2	1			10
Adequate Pc's	X						X	X	X		X
Adequate Laptops	X						X	X			X
Pc's on wired network	80	53	16		27		55	42	22	41	630
Pc's on wireless network			14	4				21			
Laptops on wired network		5			2		5	6			55
Laptops on wireless network	8		1				5	25			160
Wireless Tablets							11				3
PDA's	1	2					9	2		1	45
Intelligent Phone System							Altigen 4.5	X			Avaya G3SI
Voice Mail	X				X		Altigen 4.5	X		X	Audix, Intuity
Auto Attendant Routing	X						Altigen 4.5	X			X
Phone System Integration with Computer Systems							Altigen 4.5				
Phone System VOIP Capable							Altigen 4.5	X			X
Time Clock/Payroll					TimeForce		TimeForce				
Current Data Use of High Plains Network	**BBGH** Alliance	**CCH** Chadron Hosp/WCHR/PP			**GCHS** Oshkosh	**GMH** Gordon	**KHS** Kimball	**MHC** Sidney	**MCCH** Bridgeport	**PCHS** Grant	**RWMC** Scottsbluff
Radiology to RWMC		X			X		X		X		
Radiology to PVH							X	X			
Video Conferencing Units	2	1			1		1	1	1	1	6
AS400 (RWMC)		X	X				X		X		
MIDAS (RWMC)	X	X			X		X	X	X		
Lab (RWMC)		X					X				
RWMC Portal							X				

* Data as of September 2005, as reported in the Panhandle Health Regional Exchange Plan, a project funded by a grant from the Agency for Healthcare Research and Quality

EXHIBIT F

Request for Waiver of Part 54 Rules

Request for Waiver of Part 54 Rules

In the Commission's Order establishing the Rural Health Care Pilot Program, it recognized the possibility of the "need to waive additional rules in order to implement this pilot program, and we request that applicants identify in their application any rules that they would like us to waive for purposes of this pilot program."[63] As the Commission has recognized, "a rule may be waived where the particular facts make strict compliance inconsistent with the public interest."[64] Additionally, "the Commission may take into account considerations of hardship, equity, *or more effective implementation of overall policy on an individual basis.*"[65]

Because the Commission's Rural Health Care program rules (47 C.F.R. § 54.601 et seq.) are designed as support-based rules for services, some of them are ill-suited to the build-out of infrastructure as contemplated under the pilot program. Thus, where on their face those rules are unclear or do not readily apply, the Application seeks waiver or clarification that those rules are not applicable.

1. Funding Year Timing (47 C.F.R. § 54.623(b))

As a threshold matter, RNHN respectfully requests a waiver of the Funding Year 2006 deadline that would normally apply under Rule 54.623(b). Clearly, the delays in the FY 2006 selection and funding process resulting from the OMB's March 8, 2007 approval of the Commission's *Order* in this proceeding[66] as well as the Commission's extension of the filing period in its February 6, 2007 *Reconsideration Order,*[67] leave virtually no time for consideration of the applications, grant, and actual initiation of construction and expenditure of the funds in FY 2006, which expires on June 30, 2007. Because it is practicably impossible to responsibly expend funds in FY 2006, an extension is therefore not only justified but is indeed necessary. RNHN therefore requests a waiver of rule 54.623 to permit FY 2006 funding to be expended for twelve (12) months following the issuance of a grant.

2. Competitive Bid Requirements (47 C.F.R. §§ 54.603, 54.615)

47 C.F.R. §§ 54.603 and 54.615 contemplate a competitive bidding process for telecommunications services under the existing program. RNHN seeks a waiver of 47 C.F.R. §§ 54.603 and 54.615 to allow it to engage in a relationship with Mobius Communications Company whereby the parties will build-out fiber pursuant to an agreement calling for consideration in the form of four fiber strands in exchange for 15%

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[63] *Order*, 21 FCC Rcd. at 11,117 ¶ 18.

[64] *Rural Health Care Support Mechanism*, Order on Reconsideration, WC Dkt. No. 02-60, FCC 07-6, ¶ 8, fn23 (Feb. 6, 2007) ("*Reconsideration Order*") citing *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

[65] *Id.*, *citing WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969), *aff'd*, *WAIT Radio v. FCC*, 459 F.2d 1203 (D.C. Cir. 1972) (emphasis added).

[66] *Public Notice*, DA 07-1188 (rel. March 9, 2007).

[67] *Reconsideration Order* at ¶ 9.

of the cost for the overall network, and a commitment to maintain and operate the network.[68] Absent such an arrangement, RNHN and its member hospitals, as non-profit entities, cannot build, much less maintain and operate, the network. Moreover, Mobius, which is located in the heart of Nebraska's rural Panhandle, is uniquely positioned to bury fiber and maintain the system in western Nebraska. As a result, the competitive bidding requirement is unnecessary and wasteful in this instance and would only serve to delay the inevitable choice of the one company with the requisite local experience and resources. Given the strong desire of all parties to implement the pilot program as soon as possible, the competitive bidding requirements should be waived.

3. Determination of Urban and Rural Rates (47 C.F.R. §§ 54.605, 54.607, 54.609)

To the extent that the RHC rules (§§ 54.605, 54.607, 54.609) contemplate either distance or base-rate support, the rules should be declared inapplicable to the construction of new facilities. Those rates are determined and intended to apply to telecommunications services and not the construction of a telecommunications infrastructure as contemplated by the Pilot Program, which is intended to "fund a significant portion of the costs of deploying a dedicated broadband network." *See Order* at ¶ 10. This goal is fundamentally different from the underlying purpose of the rate rules, which are intended to provide telecommunications services at urban rates to rural providers. In other words, the costs for building a network are different than the costs of receiving service from a network, and thus, the rules should not apply to the pilot program.

4. Distributing Support (47 C.F.R. § 54.611)

47 C.F.R. § 54.611 provides that a "carrier providing services eligible for support under this subpart. . .shall treat the amount eligible for support. . . as an offset" against its universal service support obligation for the relevant year. Because the RNHN proposal is not one for services from a telecommunications common carrier, it cannot be subject to treatment "as an offset" against a telecommunications carrier's universal support obligation. Instead, the Pilot Program funding must be distributed according to a schedule that would allow for the construction of new facilities. Thus, a support schedule as contemplated in §54.611 must be waived to allow for an initial commitment and outlay of funds for the project to proceed immediately. In other words, the support cannot be reimbursed according to the 'offset' schedule contemplated by § 54.611, but instead must be disbursed to the carrier or parties contracting with it to install the fiber infrastructure on a year-by-year basis per the Project Management Plan.

5. Limitations on Supported Services (47 C.F.R. § 54.613)

Section 54.613, which also requires an urban/rural rate comparison, on its face applies only to "commercially available telecommunications services," and as a result, is inapplicable to a rural health care provider consortium seeking support to deploy broadband infrastructure under the Pilot Program. However, to the extent that this rule is found to apply to such deployments, RNHN requests that it be waived.

[68] *See* Application response to Question 5.

6. Resale (47 C.F.R. § 54.617)

To the extent that the prohibition on resale in 47 C.F.R. § 54.617(a) could be interpreted to prohibit RNHN's provision of capacity to for-profit entities *e.g.*, doctors' offices, at cost-based rates, RNHN urges the Commission to waive this rule. The exception in subsection (b) of the rule may obviate the need for such a waiver. In view of the Commission's specific intention that "for-profit network participants will pay their fair share of the network costs," a rigid application of subsection (a) of the rule is clearly inappropriate. Further, RNHN urges the Commission to recognize that, on its face, this rule is inapplicable to the use of fiber strands that Mobius will receive as compensation for its part in the network build-out.

7 Access to Advanced Telecommunications and Information Services (47 C.F.R. § 54.621)

Section 54.621 is designed to apply to the provision of Internet access services only, rather than to the construction and deployment of network infrastructure. As such, this rule should be deemed inapplicable. Instead, as the FCC has recognized, "pilot program participants will be subject to the Commission's audit authority" where the Commission retains "the discretion to evaluate the activities of applicants and determine on a case-by-case basis whether waste, fraud, or abuse has occurred and whether corrective action is necessary."[69] Thus, the objectives of the rule will otherwise be met.

8. Support for Services Beyond the Maximum Supported Distance for Rural Health Care Providers (47 C.F.R. § 54.625)

Again, because the Commission's funding will be used toward regional network infrastructure and not local services, RNHN requests clarification that this Rule does not apply to its build-out of facilities.

[69] *Reconsideration Order* at ¶ 8.

EXHIBIT G

"Nebraska Panhandle Community Health Profile"
Scientific Technologies Corporation

***How is the* Panhandle doing?**

Income per capita*	☹
Poverty level*	☹
Migration*	😐
Unemployment*	☺
Industries*	☹
High School Completion*	☺
Transportation**	☹

*as compared to national averages
**based on community-identified needs

Community Demographics and Quality of Life

The relationship between economic status and health is commonly accepted. Numerous studies have documented that lower family income is significantly associated with poorer physical and mental health status, less social support, more behavioral risk factors, higher rates of obesity and uncontrolled blood pressure, and poor medical diagnoses. After accounting for other factors, including baseline health status, family income is a significant predictor of health status. The impact of a family's economics on a variety of health concerns is well known. For instance asthma, rural women's health, and low birth weights are related to family income. Therefore, one way to improve community health is to work to improve community wealth.

To make improvements a community needs to know its status. Understanding a community's economic status is a complex task. One of the many ways to begin is to think of the community as if it were an individual. A person looks at earnings, costs and resources to understand personal finances. A community can do the same.

Analyzing indicators can help direct decisions on planning, taxing, investing and prioritizing improvements in a community. For example, an increase in the number of people who are served in homeless shelters may drive the decision to add another shelter. A community might also choose to develop rent subsidies to keep families with low incomes in housing. Another example of a chosen indicator helping direct community development could be that of a report of increased investments in a local industry. The community might respond by planning training in local community colleges to prepare workers. Once residents of a community have identified the indicators they believe measure the appropriate factors in their economy, they can use them to outline the steps that need to be taken to build economic growth.

Special Considerations for Rural Health

The Nebraska Panhandle is an 11 county area located on the high plains bordering South Dakota, Wyoming and Colorado. Nearly 100,000 people occupy this 14,000 square mile area of farm and ranch land. With only one small urban area and a few small communities, this region is primarily rural.

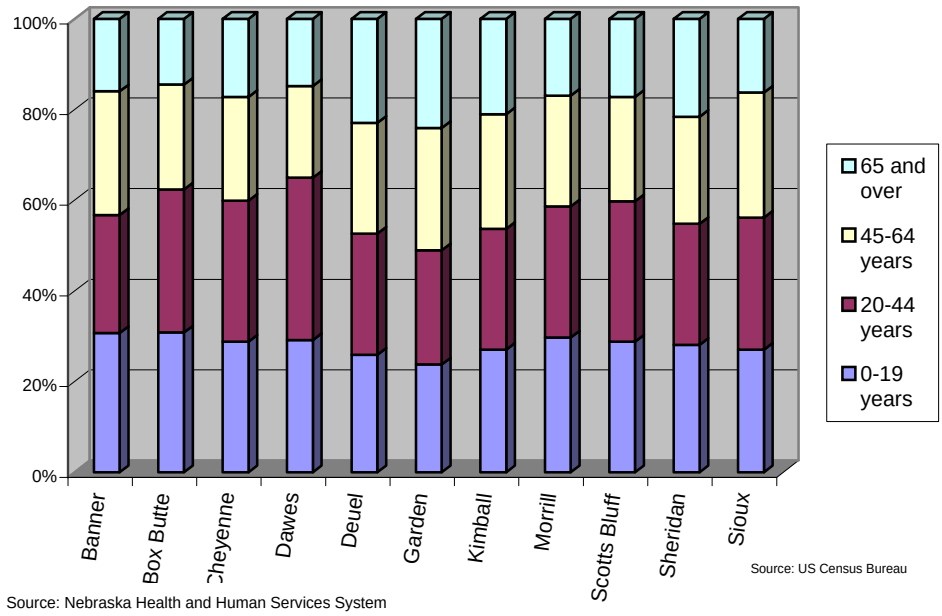
Health and economics in rural America are significantly different that urban and suburban areas. In addition, rural areas are quite different around the nation. The Panhandle is identified as a fronteir area, characterized by considerable distances from central places and relative isolation in large geographic areas. Of major concern in such an isolated area is trasportation and distance from health services. Transportation will be addressed in this chapter. Emergency transportation services and travel distances to access care will be addresed in the chapter entitled Access to Care.

POPULATION SIZE

Total Population 1990: 91,049
Total Population 2000: 90,410
Total Households 2000: 36,508

The major demographic news for rural and small-town America in the 1990's was a rebound of population growth and the resumed in-movement of newcomers. Five out of eleven Panhandle counties demonstrated a slight net gain in population. Overall, the Panhandle saw a slight net loss in population, a decline of approximately 0.5%.

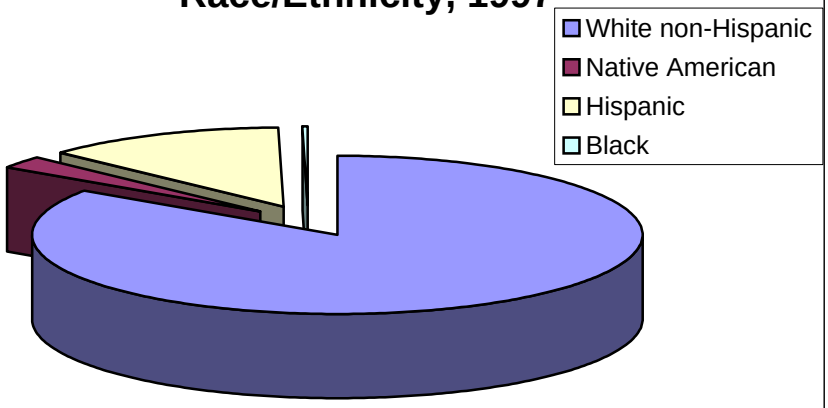
Figure 5-1. Age Breakdown of Population by County, 2000



Source: Nebraska Health and Human Services System

According to the 2000 census, younger members of the community were the ones leaving. Residents aged 65 or older make up between 14.5 percent and 24 percent of the total population in the Panhandle's counties, compared with 13.7 statewide. The proportion of the population of county residents aged 18 or under range from 23.7 percent and 30.8 percent The Nebraska average for individuals aged 18 or older is 26.3 percent, and the national average is 25.7 percent. As is being seen nationwide, the larger baby boom population is aging, but baby boomers had fewer children than did their parents. Thus an overall aging effect on the US population has been seen.

Figure 5-2. Panhandle Population by Race/Ethnicity, 1997

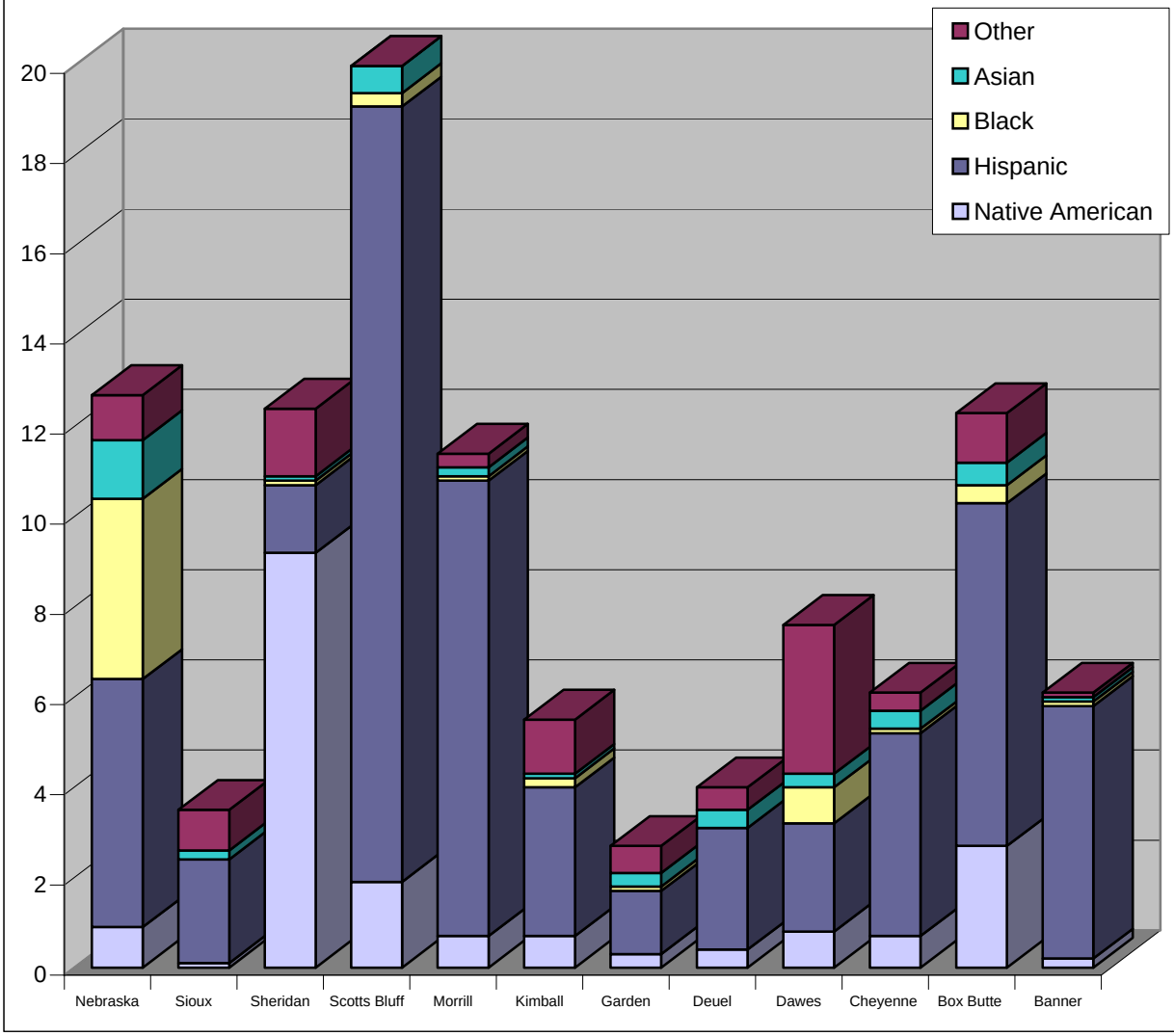


Hispanics are the fastest growing ethnic group within the Panhandle. The largest concentration of Hispanics is within

Scotts Bluff County, but significant numbers live in Cheyenne, Morrill, Banner and Box Butte counties. Native Americans make a more than 9% of the population in Sheridan County, and are also concentrated in pockets in Dawes, Box Butte and Scotts Bluff counties.

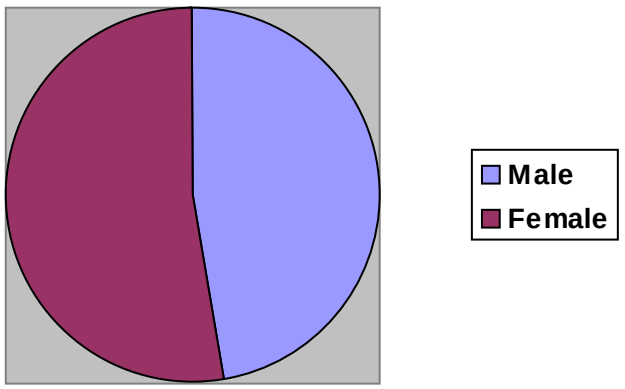
Figure 5-3. Ethnic and Racial Minority Populations by County, 2000

(percent of total population)



Source: US Census Bureau

Figure 5-4. Gender, Panhandle Population 2000



Source: US Census Bureau

Unlike much of rural Nebraska, the Panhandle did not see chronic depopulation throughout the 1900s. During the first half of this century, the region experienced a 50% population increase growing from just under 41,000 residents to nearly 102,000 residents. Since 1950, the region has experienced depopulation dropping to just over 87,000 residents in 1996 (nearly a 15% decline). The rate of depopulation increased during the decade of the 1990s.

Region-wide depopulation is masked by short-term growth in larger communities. In part, this growth is fueled by the migration of countryside and village residents to these larger communities. Over the next 25 years the region is moving towards a population base of 75,000 residents.

The loss of population impacts the region in three ways. First, the loss of market size and associated capacity to support economic activities further erodes potential growth. Second, a loss of labor force occurs, particularly through the diminished capacity of rural areas to provide young persons for the enterprises in trade center communities. Finally, loss of political power (and the likely loss of at least one state senator and possibly the Third Congressional District over the next 20 years).

DID YOU KNOW?
The Panhandle has a nearly $4.0 billion economy which is larger that the economies of many third world nations.
-Nebraska Rural Development Commission, 1999

ECONOMICS

Total Personal Income 2000: $1.7 billion
Total Economy 2000: $4 billion

The Panhandle's economic base has nearly a $4.0 billion economy supporting nearly 54,000 jobs. However, relative wealth levels are lower when compared to national, state and particularly metropolitan areas. Other characteristics of the Panhandles' economy include:

- Over twice the dependence upon production agriculture;
- Significantly less diversified economy;
- Nearly half the level of manufacturing activity;
- Less finance, insurance & real estate activity.

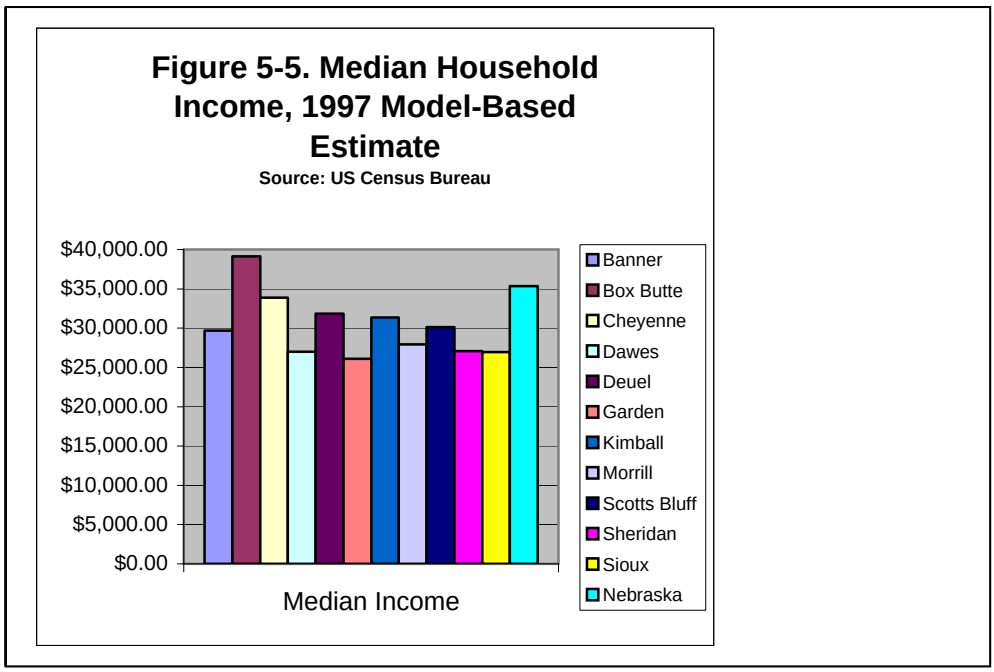


Figure 5-5. Median Household Income, 1997 Model-Based Estimate
Source: US Census Bureau
$40,000.00
$35,000.00
$30,000.00
$25,000.00
$20,000.00
$15,000.00
$10,000.00
$5,000.00
$0.00
Median Income
Banner
Box Butte
Cheyenne
Dawes
Deuel
Garden
Kimball
Morrill
Scotts Bluff
Sheridan
Sioux
Nebraska

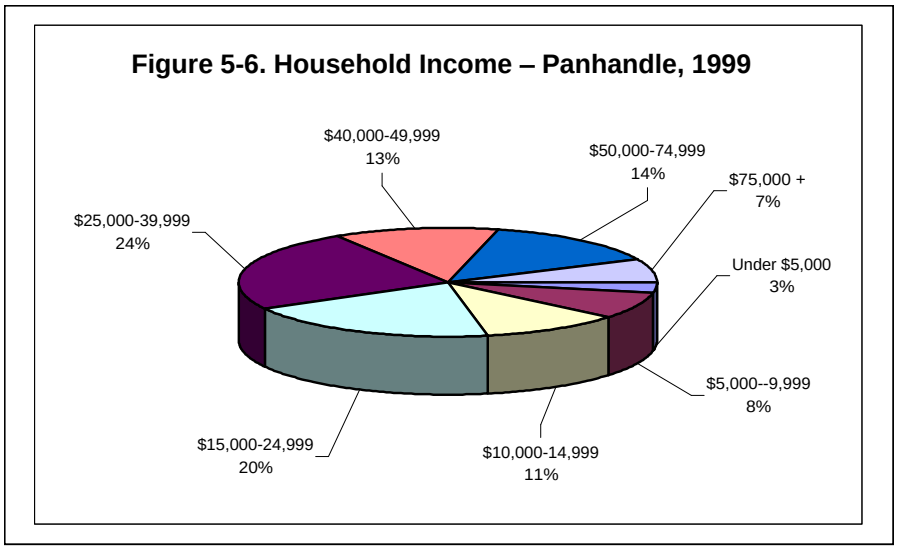
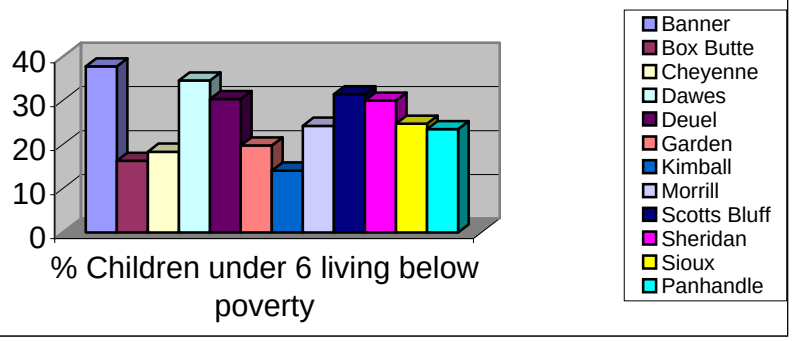


Figure 5-6. Household Income – Panhandle, 1999
$40,000-49,999
13%
$50,000-74,999
14%
$75,000 +
7%
$25,000-39,999
24%
Under $5,000
3%
$5,000--9,999
8%
$15,000-24,999
20%
$10,000-14,999
11%

Poverty

The difference between the income of the wealthiest and poorest U.S. households has grown significantly over past few decades. The bottom 40 percent of American households have had limited benefit from the economic growth of the last decade, whereas the top 20 percent of households have had historic gains in their incomes.

Figure 5-7. Percent of Children Under 6 Years Living Below Poverty Level, 2000



Source: US Census Bureau

Several national trends may help to explain the increased inequity between the top and bottom incomes of society. These include the national decline of trade unions that work to narrow the difference between workers' and managers' incomes, a drop in well-paying manufacturing jobs, the growth of the number of college-educated workers, the rising number of single-parent households, the increased competition for unskilled labor with immigrant populations, and the decline in the real value of the minimum wage. It is important for social cohesion that as wide a range as possible of social level benefits exists.

Table 5-1.

The national impact of poverty on children's health

Outcome	Likelihood for a poor child*
Death during infancy	1.3 times
Death during childhood	3 times
Low birthweight	1.2 to 2.2 times
Stunted growth	2 to 3 times
Partial or complete deafness	1.5 to 2 times
Physical or mental disability	about 2 times
Hospitalization for injury	at least 3 times
Fair or ill health	3 times
Iron deficiency (preschool)	3 to 4 times
Severe asthma	about 2 times
Lead poisoning	2 times
Missed school**	1.4 times

* compared to a child who is not poor
** due to acute and chronic health conditions

Source: The Children's Defense Fund, 1997.

From programs of improvement in a community, an increase in either income or education, or both, increases the likelihood of being in good health. Investment in quality education, particularly the education of children, is one of the most effective ways to reduce income inequity in the long term. As was mentioned earlier, the wealth of a community translates to the health.

Proportionally, the Panhandle has significantly more low income households than the state average, with nearly 34% of all households in the Panhandle living below the poverty level, as opposed to 27% statewide. Approximately 46% of Panhandle households are considered middle income, comparable to a state rate of 47%. The Panhandle has significantly fewer high income households, 20% compared to the state rate of 27%.

Roughly 12 percent of the Panhandle's children are living below the poverty level. Poor children are at increased risk for poor nutrition, low school performance, and a number of disease and conditions. Community members at several community meetings held around the Panhandle identified poverty as a major concern. Poverty was identified by many as one of the underlying factors in many of the Panhandle's

health problems. Specifically, some populations living in poverty are "invisible" in some communities. These individuals are left out of the planning process. Also, some families living in poverty are unwilling to apply for Medicaid, Kids Connection, WIC, food stamps, and other types of assistance that can ameliorate the negative impacts of poverty. A lack of economic opportunities in the Panhandle is causing many young adults to migrate out of the Panhandle for new opportunities and better housing.

Employment and Unemployment

The Panhandle labor force has not decreased as quickly as predicted by the US Census Bureau. 1997 labor force estimates based on the 1990 census appear to have estimated a steeper decline in the population, thus the workforce, than actually occurred. Although many Panhandle counties appear to demonstrate an increase in workforce from 1997 to 2000, there was an overall decline in the workforce between 1990 and 2000.

The Panhandle generates more income from agriculture, on average, than does the state. Wages for agriculture and transportation (railroads) are higher than around the state. This is not true in any other economic sectors, however. One reason for the out-migration occurring in the Panhandle is relatively low wages as compared to Colorado and Eastern Nebraska.

Figure 5-8. Comparison in County Labor Force 1997, 2000

Panhandle: Total labor force
1997: 45,000; 2000: 46,267

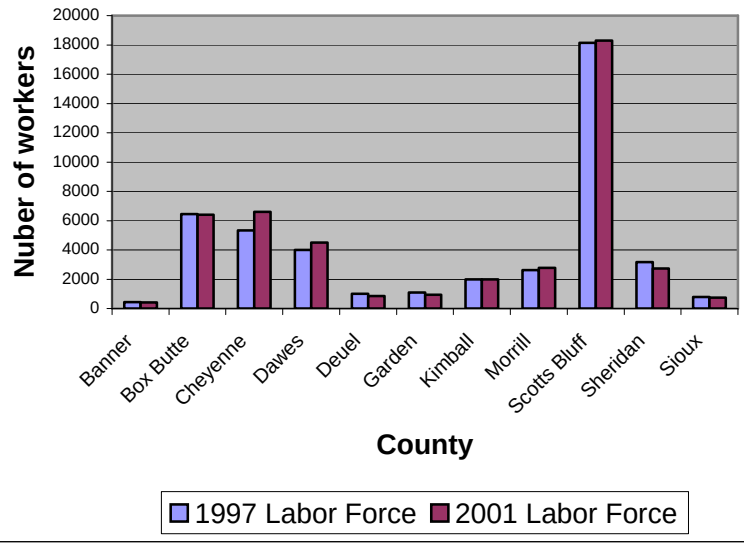
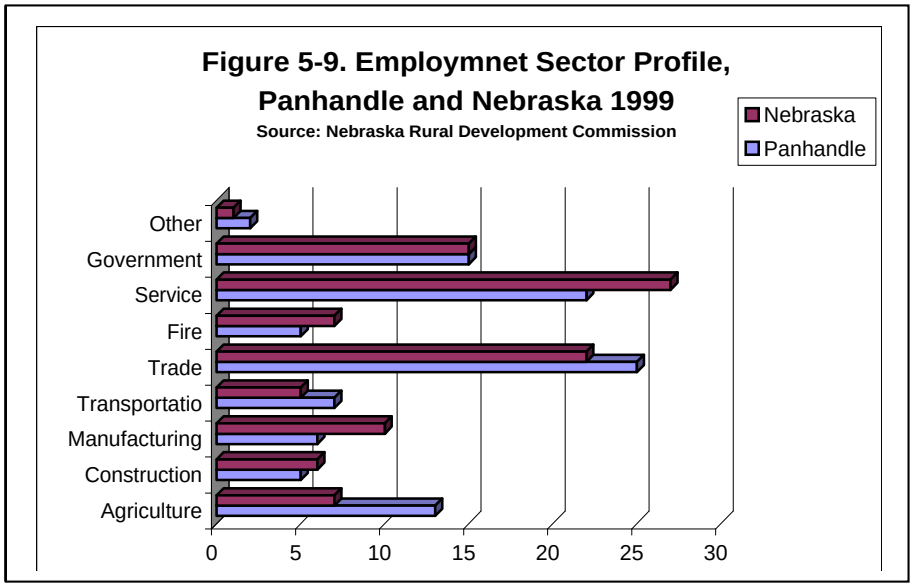


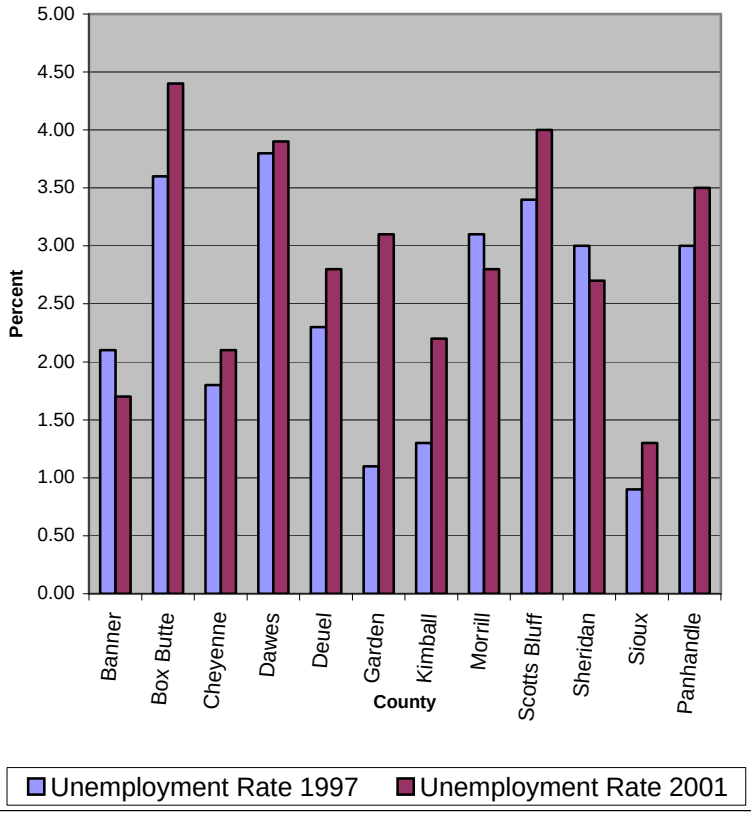
Figure 5-9. Employmnet Sector Profile, Panhandle and Nebraska 1999

Source: Nebraska Rural Development Commission



Nebraska has one of the lowest unemployment rates in the nation. Between 1997 and 2001, the rates in Nebraska and the US remained fairly steady, with Nebraska only rising from 2.6 to 3.1. During the same time period, many Panhandle counties witnessed a more significant increase in unemployment. Of note Garden and Kimball counties have seen increases between 1.5 and 3 percentage points, while Box Butte, Deuel and Scotts Bluff counties have seen an increase of approximately one percent. Unemployment rates in Banner, Morrill and Sheridan counties dropped during this time period. Overall, the Panhandle unemployment rate increased approximately one half of one percent (0.5%) between 1997 and 2001 which is in line with the state average.

Figure 5-10. Unemployment Rate by County and Panhandle, 1997 and 2000



While it appears that the Panhandle has relatively low unemployment rates, with a small increase between 1997 and 2001, community members reported that many more people are required to take several low-wage part-time and full-time positions to make ends meet. According to community members, this is more common in low-income and single parent homes. It should also be noted that a much larger portion of Panhandle residents are living below the poverty level when compared to state averages. Also, low-wage jobs often do not offer benefits such as health insurance or sick leave. Clearly, while many Panhandle residents are employed they are not earning a living wage.

Industries and Economic Development

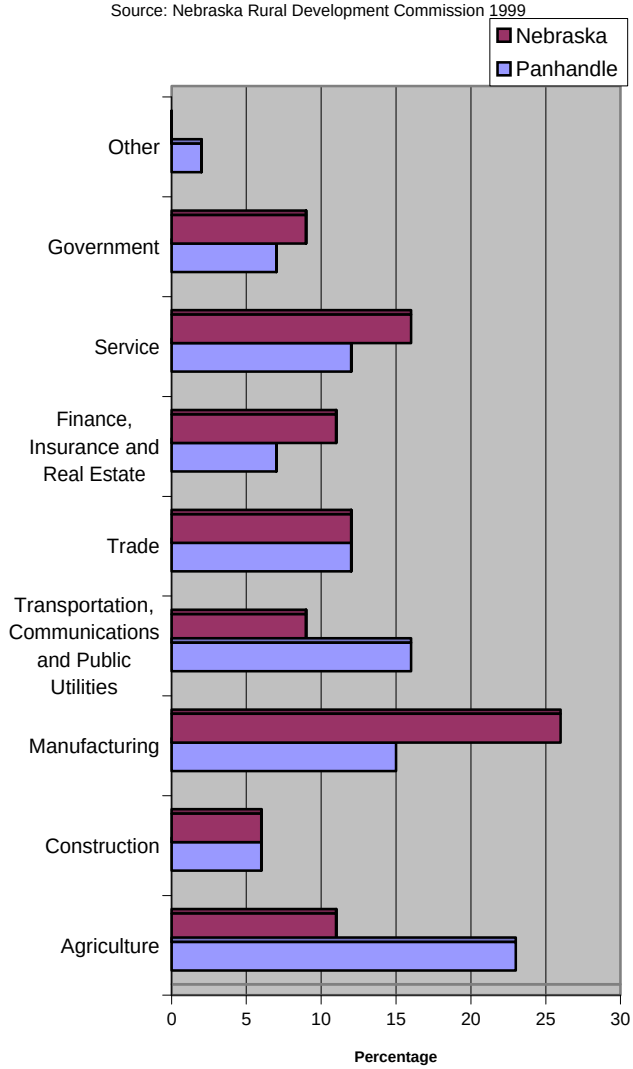
It is important to understand which industries are contributing to the economy, and how much of the wealth generated by the local economy stays in the Panhandle. The Panhandle has a local economy of approximately $4 billion, of which approximately 68% stays in the community. The region has a relatively high economic retention rate, but is weakest in finance, insurance and real estate, services and government sectors. Areas of the Panhandle that are major trade centers such as Scotts Bluff and Alliance have significantly higher economic retention rates.

Agriculture comprises a much larger portion of the Panhandle's economy than it does statewide. The same is also true for transportation due to the railroad. The

Panhandle economy is much less diversified than other areas of Nebraska. Consequently, the Panhandle economy will be more dramatically affected by fluctuations in crop and beef prices, drought, heat and other uncontrollable factors. A poor agricultural year can impact the community in areas from retail sales per capita to high rates of uninsured. Greater diversification can help insulate the Panhandle from these types of uncontrollable factors.

Figure 5-11. Percent of Total Economy by Sector

Source: Nebraska Rural Development Commission 1999



EDUCATION

Educational attainment is also related to health status. Youth who have a low commitment to school, or who drop out, are more likely to engage in risky behaviors. This can lead to substance abuse, teen pregnancy, sexually transmitted diseases and violence. Adults who have low educational attainment are less likely to have regular health insurance coverage or see a provider routinely. They are also less likely to report that their health is good. In fact, there may be a link between low educational levels and poor lifetime health. Places with a greater proportion of residents of low educational levels also have high rates of premature death.

In this technical age, people require long and intensive educations. Completion of high school means that a person has achieved a minimum of literacy. Typically, efforts are made to reduce the number of students who might leave school. Most schools and communities also work on changing behaviors which lead to expulsion.

There are sixty-four school districts in the eleven Panhandle counties. Many of these schools are very small, with fewer than 40 students. The state grades districts on a number of standards at the fourth, eighth and eleventh grades, however many of the smaller districts do not report data. Consequently, it is difficult to truly assess the quality of education being provided around the Panhandle. It is not possible to draw conclusions about the entire Panhandle, as no clears trends emerge from the data from the larger schools.

Table 5-2.
High School Drop-out Rate, 1996-1997
Source: Nebraska Health and Human Services

	Panhandle	Nebraska
% 7-12th Grade Students who Drop out	2.7	2.6

Expulsions and suspensions are predictive of overall school performance. Students in schools with high rates of suspension, for example, usually do worse on standardized tests than others. However, suspension and expulsion rates cannot be compared between districts. The incomparability results because of the ways in which policies differ. Each school district has different reasons for expulsion or suspension. Accordingly, focusing on high school drop-outs is a better indicator. It can be compared across counties.

There are many ways to complete high school. These include special education and home-based schooling, as well as school-sponsored programs leading to a General Equivalency Diploma (GED), excluding adult GEDs. Because a high school

Figure 5-12. Educational Attainment - Panhandle 1999

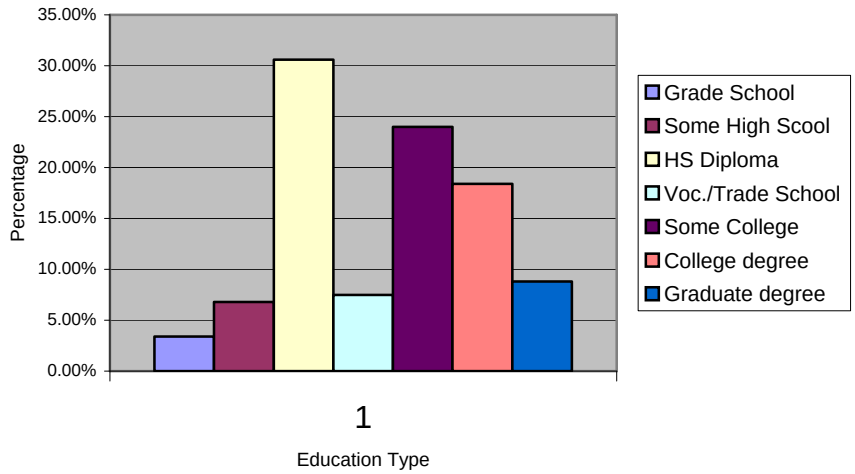
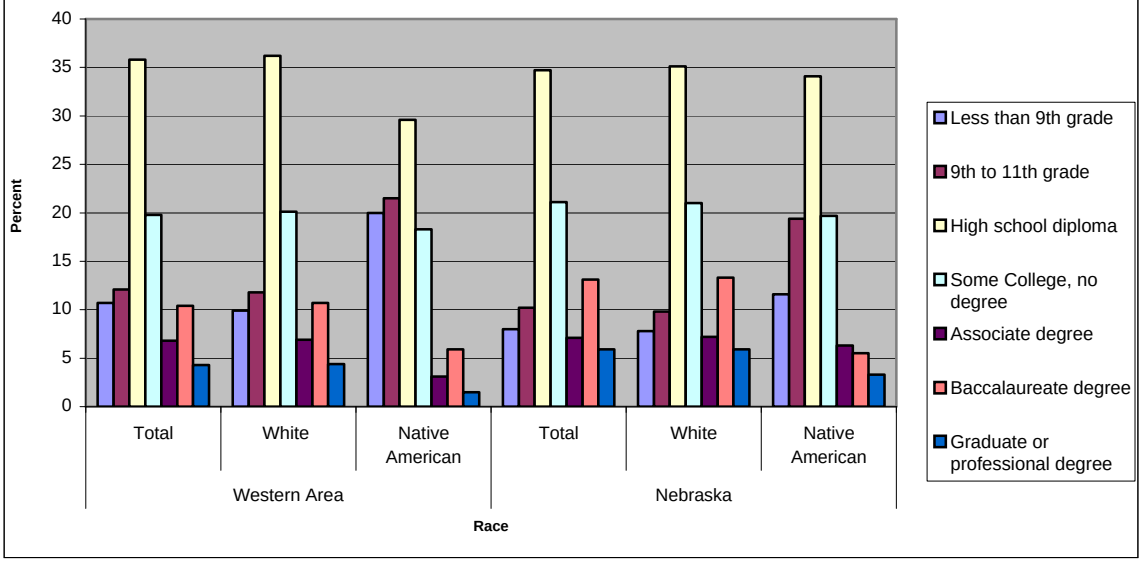


Figure 5-13. Educational Attainment by Race, Panhandle/Nebraska 1990



diploma is a key to an individual's future, it is important to know what proportion of a class completes high school.

Communities also need to know what is happening to the people who do not finish high school. Dropping out can result from pregnancy, disinterest in school or going to jail. It can also result from an unstable home or a priority on full-time work. The drop-out rate cannot be reduced without attention to other local, root causes as well. Some of these include the physical state of the school, quality of teaching, poverty, discrimination, and family cohesion.

Table 5-3.

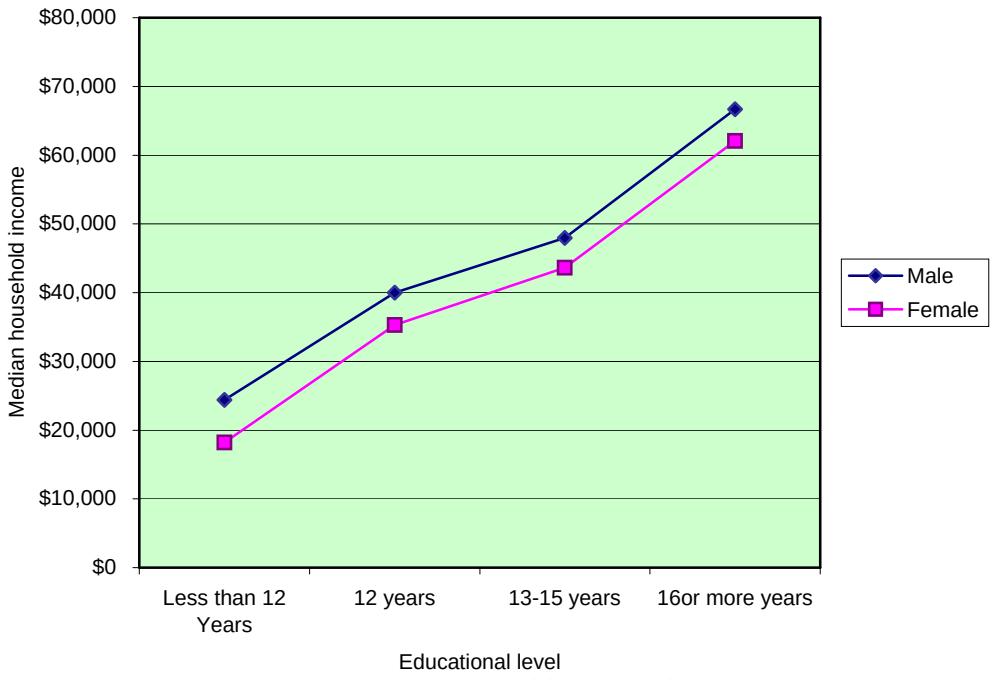
Mid-point Earnings* by Education Level, Full-time workers, 25 years and older, US 1997

Level of Attainment	Afri-Amer Male	Afri-Amer Female	White Male	White Female	Total**
Did not graduate high school	$20,067	$15,084	$25,182	$18,254	$20,285
High school graduate	$25,790	$19,993	$31,195	$21,602	$25,080
Some college/ Associate's degree	$31,474	$26,758	$37,164	$27,195	$31,013
Bachelor's degree	$35,962	$31,010	$47,220	$33,898	$39,019
Master's degree	$42,125	$40,589	$60,081	$41,884	$49,926

* 50% of the full-time working population make less than this amount
** Full-time workers, 18 and over.
Source: U.S. Census Bureau, 1998.

Not all school districts around the Panhandle report drop-out rates. For those that do report, the rates range from 0-3.75 percent. The state average is 2.7%. Based on 1990 Panhandle-wide data, Native Americans were significantly less likely to graduate from high school. These rates were not only higher than other racial groups within the Panhandle, but also were significantly

Figure 5-14. Relationship Between Education and Income



Source: US Census Bureau. Current Population Survey. March 1997

DID YOU KNOW?
When parents with low literacy participate in literacy programs, their children's grades and test scores improve. Children's reading ability goes up, and they are less likely to drop out.

higher than the State's Native American drop-out rate. Additional data needs to be collected and analyzed regarding who is dropping out and for what reasons in order to prevent future drop-outs.

Teens that do not complete high school earn less money, have a more difficult time finding jobs for which they have skills, and will be less likely to work themselves out of the cycle of poverty. As demonstrated below, there is a direct link between amount of education and yearly earnings. Because women earn less than men, dropping out of high school hurts women more than men, especially if these women are single mothers.

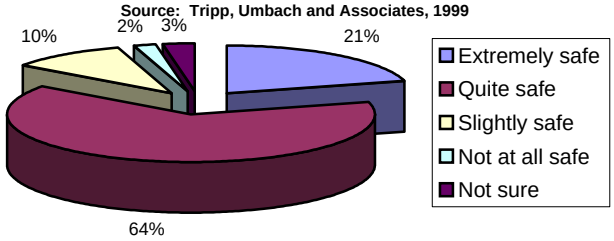
CRIME AND PUBLIC SAFETY

Crime is a scary topic for many communities, but sometimes the fear of crime may be bigger than are the real risks. This is especially true for violent crimes. A desire for personal safety can affect how people feel and where they live; it can also affect choices about work and play time. Violence and crime are related to other factors which affect health. Low educational levels, poverty, unemployment and discrimination are all risk factors for violence and poor health.

The majority of people that responded to the Tripp, Umbach and Associates survey of health in the Panhandle in 1999 felt that their community was extremely safe or quite safe. During community meetings, many community members sited low crime and relative safety as a major attraction of the area. Of those individuals responding to the survey, women were more likely to report that their community is extremely safe or quite safe. Younger individuals, especially those under 29, were more likely to report their community as extremely safe, but the same age group was also more likely to identify the community as only slightly safe. The percentage of individuals reporting their communities as extremely safe correlated with income; those with higher income were morel likely to indicate extremely safe. It should be noted that Native Americans and Hispanics were not included in this survey.

Figure 5-15. How Safe is the Panhandle?

Source: Tripp, Umbach and Associates, 1999



Corrections

Nationally, stricter laws have increased incarceration for drug and property crimes. The largest number of convictions resulting in prison terms is for property crimes,

including theft and vandalism, followed by drug offenses. Only 2.5 percent of federal incarcerations are for violent crime.

Of all arrests in the Panhandle in 1996:
- 4.2 percent were for drug offenses,
- 1.6 percent were for violent crimes, and
- 20 percent were for DUI

Of all juvenile arrests in the Panhandle in 1997:
- 4.1 percent were for drug offenses,
- 0.9 percent were for violent crimes, and
- 3.8 percent were for DUI

At community meetings, participants repeatedly reported drinking, and drunken driving as significant issues. A number of participants from around the Panhandle also indicated that certain community members are more likely than others to be arrested for a DUI, and that arrest rates do not accurately reflect the proportion of the population that drives drunk.

DID YOU KNOW?
Half of all juveniles in custody in America have a relative behind bars. 1.9 million children have a family member in jail.
- Butterfield, 1999.

TRANSPORTATION

It is difficult to represent the costs of transportation, since there is no one agency that oversees transportation, nor is there one manner of travel. Reliable transportation improves quality of life, reduces the cost of living and makes work more accessible. For example, people can reduce their shopping costs by getting to stores with lower prices and more choices of foods. They can get to a clinic and reduce the time they must take off to go to see a doctor.

There are many people who cannot afford a car. Recent national research describes how people with low incomes make their daily travel. In 1995, 26 percent of low-income households in the U.S. did not have a car. Only four percent of higher income households did not have a car. When a low-income household has a car, it is likely to be an average of ten years old. Higher income households own cars which are, on average, 7.3 years old (Murakami and Young, 1997). People who were on public assistance in the U.S from 1992-93 spent nearly 15 percent of their income on transportation. People who earned low incomes were likely to have more passengers on their car trips than higher income families. They also made about 20 percent fewer trips in general than people in higher income households.

Table 5-4. Panhandle Residents Responding to Transportation Survey-Need for Transport by Others

Employment	Median Trips per month	
	In-town Destination	Out-of-town Destination
Education	20	20
Find Housing	20	20
Shopping	5	0
Social	4	1
Other	3	1
Medical	2	2
Employment	1	2

A recent transportation study evaluated public, private and semi-public transportation resources in the Panhandle. One hundred sixty-two clients of fourteen different Panhandle social service agencies responded to a survey the types of transportation they use to get to appointments. Thirty-seven

percent reported that they do not have a car. Listed in Table 4-4 you will find the median number of trips per month in which respondents rely on someone else for transportations.

The Handibus, funded by the State of Nebraska through federal allocations, provides transportation services in all counties except Banner, Garden and Sioux. The majority of these services are provided to seniors, and many community members reported that trips on the Handibus are often all day excursions if several individuals are using the services. Several agencies also run their own transportation services funded by a variety of sources. These services are inconsistent around the Panhandle. Very few bus and taxicab services exist in the Panhandle and are limited to the more populated areas of the region.

Summary

The relationship between economic status and health is well established. To make improvements a community needs to know its economic status. This chapter is the first step for the Panhandle to begin to evaluate how the economy, education and transportation systems impact the health of the community. Based on the information in this chapter, the community can celebrate successes and begin to prioritize areas for improvement. Only a strong community can be a healthy community.

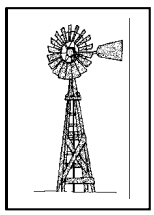


EXHIBIT H

Services offered and Facilities Description of RNHN Providers

Exhibit H

Services offered and Facilities Description of RNHN Providers*

Services Offered	Beh. Health	Birth/Infant	Blood Bank	Cancer	Cardio-Pulm	Sleep Service	Diabetes	ER	Endoscopy	Genetics	Heart Cardiac	Home Health	Immunization	Inten. Care	Internal Med	Lab	Nutrition	Occ. Health	Occ Ther OP	Orthopedics	Peds	Pharmacy	Phys T OP	Radiology	Rehab, IP	Speech T OP	Surgery	Transplant	Weight Mgm,	Women's Health OB
Box Butte General Hospital*	X	X	X	X	X	X	X	X	X				X	X	X	X	X		X		X	X	X	X	X	X	X			
Chadron Community Hospital*		X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Legend Buttes Health Services													X			X						X		X						
WCHR	X						X						X			X	X				X									X
Garden County Health Services*							X	X	X				X		X	X	X	X	X	X	X		X	X	X	X	X			X
Garden County Health Services Clinic*							X						X		X	X					X									
Lewellen Clinic							X														X									
Gordon Memorial Hospital		X	X		X			X	X			X	X	X		X						X		X			X			X
Gordon Clinic							X						X							X										X
Rushville Clinic							X						X								X									X
Kimball Health Services*		X	X		X	X	X	X	X	X			X		X	X	X		X			X	X	X	X	X	X		X	X
Memorial Health Center		X	X		X			X	X			X		X		X	X	X				X		X	X		X			
Morrill County Community Hospital					X			X	X		X	X	X	X		X				X				X	X		X			
Perkins County Health Services		X	X	X	X		X	X	X		X	X	X	X	X	X	X	X		X		X		X	X		X			X
Grant Medical Clinic		X					X	X					X		X	X											X			
Regional West Medical Center*	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X

Hospital	**Beds**	**Total Employed***	**FTE***	**Active Medical Staff**	**Total Inpatient Visits***	**Total Outpatient Visits***	**Total Clinic Office Visits***
Box Butte General Hospital	25	230	185	3	1,186	24,501	4,350
Chadron Community Hospital	25	120	90		2,297	1,087	2,415
Garden County Health Services*	10	98	76	2	177	2906	
Gordon Memorial Hospital	25	97	76				
Kimball Health Services*	20	89	72.6	4	303	3050	3,353
Memorial Health Center	25	248	225		1,156	4,923	4,536
Morrill County Community Hospital	20	43	22		190	5549	1,293
Perkins County Health Services	21	170	90	1		377	9,142
Regional West Medical Center*	182	1275	1078	101		7057	137,056

* Information as of May, 2007. All other information as of September, 2005. Data for other RNHN clinics unavailable at time of submission. *See* Panhandle Regional Health Information Exchange Plan (2005) (on file with author).